



Fullerton College

Self-study for Mathematics Program

2025

Section 1: Introduction

1. Briefly describe your program, make sure to include how your program helps the College achieve its mission.

The Fullerton College Mathematics Department actively advances the College's mission by creating flexible, inclusive pathways that foster student learning, achievement, and transfer. Offering both an Associate in Science and an Associate in Science for Transfer (AS-T) degrees, we prepare students for educational and career growth in mathematics and related STEM fields while also meeting the needs of non-STEM majors through high-demand courses such as Liberal Arts Math (MATH 100) and Statistics (STAT C1000). In response to AB 1705, we developed courses with support and corequisite models to ensure equitable access and success for students placed directly into transfer-level math. In addition to rigorous coursework, we provide robust academic support through the Math and Computer Science Tutoring Lounge (formerly the Math Lab), and work with the Math Success Program,

Academic Support Center and Hornets Tutoring, ensuring that students from diverse backgrounds receive the guidance needed to become successful learners and responsible leaders. With updated courses, accelerated pathways, support courses, and an array of Honors offerings designed to challenge and inspire high-achieving students, the Mathematics Department exemplifies Fullerton College's commitment to student success, equitable outcomes, and meaningful transfer and career opportunities.

Section 2: Students

2.1 Student Demographics and Enrollment Trends

1. Using the data provided by the OIE, describe the student population your department serves. Which demographic groups have the most enrollments in your program? Which student groups are underrepresented in your program? Has the demographic profile of your program changed over the last four years?

Over the last five years, the Mathematics Department has served a slightly smaller number of females (on average 45.6%) compared to the number of males (on average 49.2%).

The percent of Asian students enrolled has been steady at 13.8%, the percent of Black students has remained stable at 2.6%, the percent of Latinx students has slightly increased from 59% in 2020-2021 to 62% in 2024-2025, while the percent of White students had steadily decreased from 15% in 2020-2021 to 12% in 2024-2025. Over the five past years, we have served only 45 American Indian or Alaska Native students and only 87 Native Hawaiian or Other Pacific Islander students. The percent of students of two or more races has increased from 7% in 2020-2021 to 10% in 2024-2025. Black students and American Indian students are underrepresented in our program. Latinx students have the most enrollments in our program.

The total headcount decreased significantly from 9,215 in 2020-2021 to 6,772 in 2021-2022 (a decrease of 26.5%) but has steadily increased in the last four years. This trend in the total headcount can be explained by our resuming of teaching face-to-face classes, our offerings of new courses such as MATH 121 (statistics with support) and MATH 131 (business calculus with support), our expansion of the services offered in the Math & Comp Sci Tutoring Lounge (formerly the Math Lab) such as virtual tutoring, help with graded assignments including but not limited to worksheets and quizzes, and longer tutoring hours.

2. Briefly describe course-level enrollment trends in your program over the past five years. Have the enrollment trends in your program changed over the last five years? To what do you attribute

any changes or lack of changes?

Over the past five years, our department has seen significant shifts in math course enrollment patterns, largely influenced by statewide education reforms and the broader impacts of the COVID-19 pandemic. While overall college enrollment declined between 2020 and 2025--consistent with national trends across community colleges--the composition of math enrollments changed in important ways. Notably, there has been a clear move away from below-college-level courses, with more students enrolling directly in transfer-level and degree-applicable math.

This transition is largely the result of curricular and placement reforms aligned with state mandates, particularly AB 705 and AB 1705. In response, our department has redesigned math pathways to shorten course sequences and promote immediate enrollment in college-level courses, such as statistics and precalculus. This led to the phase-out of remedial offerings such as Intermediate Algebra (MATH 40) and Combined Elementary and Intermediate Algebra (MATH 41), and a greater emphasis on ensuring students are transfer-ready from the start. By 2025, we also consolidated our separate College Algebra (MATH 141/143) and Trigonometry (MATH 142/144) courses into a streamlined precalculus course, and reclassified statistics under the "STAT" prefix to align with the Common Course Numbering system to improve transfer clarity and align with degree requirements.

External factors also played a role in the decline in enrollment. The pandemic and the shift to remote learning accelerated declines in enrollment, while placement reforms enabled more students to bypass remediation. Initiatives such as dual enrollment and the Fullerton College Promise Program along with changing high school demographics influenced the math pipeline feeding into our department.

In summary, we have moved from multi-level remedial pathways toward direct placement into transfer-level math courses. These changes reflect a broader institutional commitment to improving student access, reducing barriers, and increasing completion rates through evidence-based reforms and intentional curriculum design.

3. How do you monitor and modify course offerings, including time and modality, to ensure that students' needs are being met?

We utilize a data-driven approach to monitor and modify our course offerings, scheduling, and modalities to ensure we are responsive to student demand and focused on maximizing student success.

First, we monitor enrollment constantly, in real time, immediately adding seats and/or late-start sections if courses fill up faster than anticipated. We continually modify course delivery

and timing to meet the needs of working adults, non-traditional students, and those needing flexible options.

- Pacing: We offer late-start sections (ranging from 8 to 13 weeks) for high-demand courses such as MATH 100 (Liberal Arts Math), MATH 130 (Business Calculus), MATH 140 (Precalculus), MATH 151 (Calculus I), MATH 152 (Calculus II), and STAT C1000 (Statistics). This accommodates students who may have been misplaced in their math course or prefer a compressed timeline.
- Time of Day/Week: We offer courses like MATH 130 and STAT C1000 on Saturdays to specifically accommodate working adults.
- Modality: In response to demand and enrollment trends, we have significantly increased the number of fully online and hybrid sections of core courses such as MATH 100 and STAT C1000.

Second, we have undertaken significant curriculum changes to improve student pathways, foster success, ensure transferability, and align with state standards. Specifically:

- Courses with Support: We now offer courses with built-in support and remediation such as MATH 131 (Business Calculus with Support) and STAT C1000E (Statistics with Support).
- Calculus Pathway: We introduced MATH 140 (Precalculus) as a single-semester option, providing students with a dedicated course for remediation and preparation for the subsequent calculus series.
- C-ID Alignment: To maintain C-ID alignment and necessary transfer requirements, we replaced several course sequences:
 - MATH 252 (Linear Algebra and Differential Equations) and MATH 253 (Additional Topics in Linear Algebra) were replaced by MATH 255 (Linear Algebra) and MATH 260 (Ordinary Differential Equations).
 - MATH 171 (Discrete Mathematics) and MATH 172 (Graph Theory and Linear Algebra) were replaced by MATH 170 (Discrete Structures) and MATH 255 (Linear Algebra).

Third, our focus on pedagogy ensures instructional consistency and quality across all modalities:

- We have worked collaboratively in implementing AB 1705, including modifying the ways we teach MATH 151 (Calculus I) since it is now the entry math course for many STEM students.
- We have facilitated extensive faculty development, including having conducted training for adjunct instructors in summer 2025 on teaching key courses like MATH 140, MATH 130/131, MATH 151, and STAT C1000.
- We promote consistent student experience by sharing learning resources—including

syllabi, worksheets, video lectures, projects, study guides and exams for each course—via Canvas.

These strategies are complemented by our active involvement with Hornets Tutoring, the First Year Experience Program, and the Math Success Program, all of which contribute to our overall success rate steadily increasing over the last three years, rising from 48% in the 2022-2023 academic year to 52% in 2024-2025.

2.2 Student Achievement

1. Using data provided by the OIE, describe overall student achievement counts, rates, and trends in your program over the past five years, these include: course success rates, degrees/certificates completion counts, transfer counts, licensing, job placement, wage improvements (not all of these measures apply to every program).

Over the five academic years from 2020 to 2025, the success rates across a range of mathematics courses reveal a mixed pattern. Overall, the data shows that most math courses have either remained the same or experienced some decline in student success, with many hovering below the 60% mark.

Introductory and mid-level courses such as MATH 100 and MATH 130 tend to show lower success rates, often fluctuating in the 40% to 50% range. Some courses, like MATH 141 (College Algebra) and MATH 143 (College Algebra with Support), have dipped below the 30% range, pointing to consistent challenges in this course. For instance, MATH 143 shows one of the lowest overall performances, with a total success rate of just 33%. Similarly, MATH 130 and MATH 131 show a steady downward trend over the years, ending with success rates of 46% and 37%, respectively.

In contrast, a few courses stand out for their strong and consistent success. Honors-level classes, such as MATH 120H, MATH 141H, and MATH 151H, consistently outperform their regular counterparts. MATH 120H, in particular, has maintained high success rates across all years, finishing with a total success rate of 87%. MATH 203 (Math for Elementary Teachers) stands out as the top performer, with near-perfect scores—including a 100% success rate in one year—and an impressive overall rate of 90%.

There are also examples of courses showing improvement over time. MATH 171 and MATH 172 both display upward trends, ending with total success rates of 62% and 68%, respectively. This suggests that while some foundational courses are struggling, students in more advanced courses may be better prepared or more motivated, leading to higher levels of achievement.

Ultimately, this data reveals a clear divide: while Honors and upper-division math courses tend to see strong success, many foundational and mid-level courses suffer from low and

often declining success rates. The pattern suggests a need for targeted support in these early courses to better prepare students for higher-level mathematics.

The department success rates, compared to the institutional set standard and stretch goal, show a decline from 2020–2023 followed by a modest rebound.

Throughout all years:

- The success rate remains below the Institution Set Standard (62%) and the Stretch Goal (80%).
- The most recent year (2024–2025) shows improvement, but still below institutional expectations.

2. Are there student groups whose success rates are below the institution-set standard or whose success rates are below other student groups? What factors can explain this?

The data in the graph “Success Rates by Ethnicity (2020–2025)” reveal clear differences in student outcomes across ethnic groups. The institution-set standard for success is 62%, yet only Asian students, with a 68% success rate, meet or exceed this benchmark. All other groups fall below the standard, with particularly low success rates among Native Hawaiian or Other Pacific Islander students (37%), Black or African American students (42%), and Latina/o/x/e students (45%). American Indian or Alaska Native students achieve a 53 percent success rate, while students identifying as White (58%), Two or More Races (57%), or Unknown (57%) perform slightly below the institutional standard. No group reaches the stretch goal of 80%.

These disparities suggest that some student groups may face systemic barriers that hinder their success. Contributing factors could include differences in access to academic and financial support, varying levels of college preparation, and the effects of cultural and social belonging within the institution. Broader social and economic inequities may also play a role. Addressing these gaps will likely require intentional efforts to promote equity, expand access to resources, and strengthen support systems that foster success for all students.

3. In terms of your degree and certificate completers, are there any groups who are underrepresented in your completion data compared to the overall enrollment in your program?

An examination of degree and transfer outcomes among Fullerton College math degree completers reveals disparities across racial and ethnic groups. While some students are completing their programs at high rates, others—particularly those from historically underrepresented backgrounds—face considerable challenges in achieving the same

outcomes.

Latinx students, who make up a substantial portion of Fullerton College's overall student population, show the lowest outcomes in the dataset. Only 36% of these students complete their degree, and an even smaller percentage—just 25%—go on to transfer. The combined degree/transfer completion rate for this group also stands at 36%, indicating a troubling pattern of underrepresentation in successful math degree completion. Given their numerical majority on campus, this gap points to systemic issues that warrant further attention and targeted intervention.

White students show a similar trend, with only 36% completing their math degree. Although their transfer rate is higher at 55%, their combined completion rate (55%) still lags behind other groups, suggesting that they too may face barriers to degree completion, particularly within math pathways.

In contrast, students identifying as Asian and those reporting two or more races exhibit significantly stronger outcomes. Asian students have a degree completion rate of 71%, a transfer rate of 68%, and a combined completion rate of 86%. Similarly, students of two or more races achieve a 73% degree completion rate and an 82% transfer rate, resulting in a combined success rate of 91%. These figures suggest that these groups are not only persisting in their math coursework but are also reaching degree and transfer milestones at high levels.

American Indian or Alaska Native students are shown to have a 100% completion and transfer rate. However, this data point likely reflects a very small sample size and should be interpreted with caution. While promising on the surface, such a result may not be statistically representative.

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4. Are your students completing your degree and certificate program requirements in the expected time frame? Are there certain groups whose rates are below other student groups? Discuss any efforts to improve time to completion.

The data shows a gradual improvement in students completing degree and certificate programs within the expected time frame, though completion still largely extends beyond the expected two-year window.

From Fall 2018 to Fall 2022, the 2-year completion rate increased from 17% to 22%, and the 3-year completion rate rose from 10% to 26%. This upward trend is encouraging, indicating progress toward timely completion. However, the fact that more than half of students are still not completing within three years—especially in earlier cohorts—shows that additional work is needed to support faster degree and certificate attainment.

Latinx students show the lowest 2-year completion rate (6%), with only 18% completing in 3

years, and 13% taking longer than 3 years. This group is significantly underperforming relative to others, despite being the majority population on campus. White students have moderate outcomes, with 24% 2-year and 19% longer-term completion, but no data on 3-year completions, indicating a delayed trajectory. Race/ethnicity unknown and students identifying with two or more races show mixed results, with about 19-25% completing in over 3 years, but still lower than Asian or Filipino peers.

The campus, as well as our department, has implemented several strategies to improve time to completion. The campus has the Hornet Pathways and Guided Pathways programs, in which students are encouraged to select a program of study early, aligning coursework with career or transfer goals to minimize unnecessary credits.

Additionally, the placement model has changed so that multiple measures are in use. This, combined with the AB 705 and AB 1705 legislation, has changed the number of courses students need to complete the program, depending on their entry point.

One substantial change in our course offerings is the elimination of College Algebra (MATH 141/143) and Trigonometry (MATH 142/144). These courses, which totaled 8-10 units, have been replaced by the 6-unit Precalculus course (MATH 140).

To ensure students can successfully progress through their math sequence without repeating courses, we have comprehensive support systems. These include individual tutoring and resources available in the Math & Comp Sci Tutoring Lounge, embedded tutors through Hornets Tutoring, and skills support through the Math Success Program. Furthermore, we are currently developing a co-requisite course for Calculus I (MATH 151). This new, integrated support course is designed to provide "just-in-time" assistance, accelerating student success and reducing the need for repetition in this critical gateway course.

2.3 Student Learning Outcomes

1. Describe your program's processes and practices for defining, assessing, and analyzing student learning outcomes at the course (CSLO) and program (PSLO) level. Include a discussion of how your program uses the results of CSLO/PSLO data to inform course and program improvement efforts.

Our CSLOs are established upon course creation and are designed for regular assessment, with each course assessed once per Program Review cycle. To assess CSLOs, instructors are required to integrate common questions into the final exams of all course sections during the assessment semester. After finals are graded, instructors enter student data into eLumen, then course coordinators extract data from eLumen. The course coordinators compile a report comparing the results to previous assessments and review reflections provided by

instructors. The assessment results are presented to full-time faculty for departmental discussion to improve individual courses such as which concepts warrant additional instruction or remediation. Occasionally, from our faculty discussions or formal curriculum changes, the common assessment questions are updated, or the CSLOs themselves are revised to ensure continued relevance and accuracy.

As part of a campus-wide initiative, new PSLOs were finalized in spring 2022. We subsequently mapped the relevant CSLOs for each course to these new PSLOs within the eLumen system. While PSLO data collection has not been completed, we are currently in the process of transitioning all assessment activities to the new Insights platform. We will complete the transition and ensure new CSLO data is successfully migrated and entered into Insights, establish a similar mapping structure connecting CSLOs to the new PSLOs within the Insights environment, and begin analysis and reporting of PSLO data once the transition is complete.

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2. (OPTIONAL/NOT REQUIRED) Using the data provided by OIE, describe the most salient results of CSLO or PSLO mastery rates. Did you find significant differences by race, ethnicity, gender, and other categories?
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Section 3: Other Areas of Program Effectiveness

1. Document any substantial changes to your program curriculum since the last review and discuss what prompted these changes. Looking forward, what changes to the curriculum do you plan based on the emerging needs of your discipline, industry, student population, etc.

AB 705. AB 705 requires the placement of students into college or transfer-level math courses. As a result, all non-transferable math courses (MATH 4, 6, 7, 10, 15, 20, 24, 30, 40, 41, 43) and most support co-requisite courses (MATH 26, 31, 32, 33, 34) will be completely deactivated and out of the catalog by Fall 2026. These once constituted half of all MATH enrollments: e.g., 50.2% of the 8928 enrollments at census in Fall 2015, compared to a total MATH/STAT enrollment of 4369 without these at census in Fall 2025. Furthermore, the prerequisites on our remaining courses which have these deactivated courses as prerequisites are being changed to “Intermediate Algebra or the equivalent, with a grade of C or better, or by assessment through the college's multiple measures placement processes,” effective Fall 2026.

AB 1705. AB 1705 requires colleges to recommend direct placement into calculus for students who have taken precalculus and offer a single-semester preparatory course for those who have not. As a result, we have created two new courses to help our students who are not

prepared to go directly into calculus. Effective Fall 2025, Precalculus (MATH 140) now covers in one 6-unit course what College Algebra (MATH 141) and Trigonometry (MATH 142) covered in 8 units. (We have been phasing out MATH 141, 142, and their variants 141H, 143, and 144 since Summer 2025, and they will be completely removed by Summer 2026.) To satisfy the law and provide students with an alternative method of support, we have created MATH 051 (Support for Calculus I), which we will begin offering in Fall 2026.

Common Course Numbering. In Fall 2025, as part of Phase I of CCN, MATH 120, 120H, and 121 were replaced by STAT C1000, C1000H, and C1000E, respectively. In Fall 2027, as part of Phase IIB of CCN, MATH 151, 151H, 152, and 152H (Calculus I and II) will be replaced by MATH 2210, 2210H, 2220, and 2220H, respectively. Also in Fall 2027, as part of Phase III, we anticipate that MATH 130, 131, and 251 (Business Calculus and Multivariable Calculus) will be replaced by MATH C1140, C1140E, and C2230, respectively.

Linear Algebra Overhaul. Beginning in Fall 2025, the MATH 171/172 course pair (Discrete Math, Graph Theory and Linear Algebra) sequence has been replaced by MATH 170/255 (Discrete Structures, Linear Algebra), and MATH 252/253 (Linear Algebra and Differential Equations, Additional Topics in Linear Algebra) has been replaced by MATH 255/260 (Linear Algebra, Ordinary Differential Equations). In the old pairings, the topics of discrete math and, especially, linear algebra were split and/or repeated throughout our curriculum. With the new pairings, each of three important topics is now the subject of its own course: MATH 170 on discrete math, MATH 255 on linear algebra, and MATH 260 on differential equations. This has several benefits. Although the total number of units in each course pair remains the same, in some cases, students will be able to take the courses they need with fewer units overall. For example, to cover all three topics, a student previously had to take 14 units spread over four courses, with much material repeated; but now, a student can cover the same material in 11 units spread over three courses. At the other extreme, the "liberation" of linear algebra makes it possible for, say, an economics or digital design student, to take just the linear algebra they need, unencumbered by graph theory or differential equations they do not need. Along these same lines, these newer courses have lower prerequisites than the courses they replace, which reduces barriers to access and provides more flexibility in scheduling. And last but not least, all of the new courses are aligned with C-ID courses, whereas none of the old ones are. We want to provide the best transfer options for our students, and this C-ID alignment should, among other things, help transfer students avoid having to retake this material at their destination colleges.

Future changes. Depending on how AB 1705 guidance changes, we will react as quickly as possible. We will increase our corequisite MATH 051 offerings as student demand increases. This may be particularly useful for our students who do not pass MATH 151 the first time. We may want to consider creating a corequisite for MATH 152 depending on the success of MATH 051 and student need.

2. Please briefly describe opportunities your students have to apply and deepen knowledge and skills through projects, apprenticeship, internships, co-ops, clinical placements, group projects outside of class, service learning, study abroad, and other experiential learning activities that you intentionally embed in coursework or elsewhere in your program.

The Mathematics Department provides opportunities for all students to enhance their learning in class. We have a 2-unit stacked seminar course which includes three Honors courses. This seminar course provides students with the opportunity to learn advanced problem-solving, how to read and understand unsolved problems in mathematics, how to engage in research, and how to professionally typeset their mathematical work using LaTeX. We also encourage students to train and take the national AMATYC and Putnam math exam competitions. STEM students are often the ones who engage with this type of experiential learning, but we do also provide opportunities for all students to engage in active learning outside of the classroom.

We offer multiple opportunities for our Liberal Arts Mathematics and our Introduction to Statistics students to engage in mathematics outside of class. We have First Year Experience programming in all sections of these courses. This programming includes 5 required activities, which include an occupational outlook activity that guides students in mapping out their potential career path and gathering information about it. In both courses, faculty are also encouraged to assign projects that involve more hands-on discovery and analysis of mathematics in “real-life” contexts that are meaningful to the students. For example, in Liberal Arts Mathematics, some instructors assign a car-buying project where students find a vehicle of their choice and need to determine financing options and comparisons between new and used vehicles. In statistics, students are often asked to collect data about a topic they wish to investigate and conduct exploratory data analysis and statistical tests on the data.

The Mathematics Department works with many programs on campus to help our students grow mathematically. In Fall 2025, 24 sections of math classes have embedded tutors provided by Hornets Tutoring. We also work very closely with the Math and Computer Science Tutoring Lounge to ensure that all levels of our students can receive drop-in tutoring in a collaborative environment. In the Tutoring Lounge, Tutoring Center and Hornets Tutoring, the students themselves can become tutors in the program. These spaces create a nurturing environment for learning that helps students become independent learners with strong study, time management, and collaborative learning skills for both the students and the student tutors. We continue to work with the Math Success Program as well. This program currently offers pre-semester bootcamps and semester-long programming for all levels of mathematics through Calculus I. Beginning this semester, this program is expanding

its offerings by allowing our precalculus students to engage in their bootcamp program if they end up dropping their MATH 140 class and plan on retaking it in the following semester. We also have a robust STEM Student Learning Community cohort and are planning on offering UMOJA cohorts next year.

3. Describe any laws, regulations, trends, policies, procedures, or other influences that have an impact on your program. These can include things like Vision 2030, CALGETC, Common Course Numbering, etc.

There have been quite a few laws that have dramatically impacted our program.

- As mentioned above, AB 705, AB 1705, and CCN have significantly changed our course offerings.
- Also, Title 5 changes to AA GE's have affected statistics courses: Previously they satisfied two areas (A2: Language and Rationality – Analytical Thinking, and B2: Natural Sciences and Mathematics – Mathematics), but now they only satisfy one (2: Mathematical Concepts and Quantitative Reasoning).
- With the passing of AB 928 in Fall 2021, our calculus courses are limited to 4 units to keep the 60-unit threshold for transfer degrees. We would have liked to embed more support in our calculus courses, but we had to create corequisite support courses instead of embedded support courses.
- For Vision 2030, we have worked with our Dual Enrollment Program to offer sections of MATH 100 and STAT C1000 in both in-person and online modalities for local high schools. We will continue to offer dual enrollment sections of these courses and, if there is demand from area high schools, expand these offerings.

Section 4: Faculty and Staff

4.1 Population and Demographics

1. Using the data provided by OIE, describe your program's staff (full-time/part-time faculty, nonfaculty, classified). How reflective of your program's student population is your staff?

The Mathematics Department at Fullerton College consists of a highly qualified and collaborative group of educators, classified staff, and administrators committed to fostering student success and promoting academic excellence.

Currently, the department comprises 26 full-time faculty members, 31 part-time faculty

members, 2 classified professionals, and an administrator. The department also benefits from the assistance of the 2 classified staff and several tutors in the Math and Computer Science Tutoring Lounge.

At present, our faculty demographics partially mirror the composition of our student body. Although we have achieved some balance in terms of gender representation, significant disparities remain in ethnic representation. These discrepancies are particularly pronounced among Asian and White faculty, who are overrepresented, while we see underrepresentation in the Hispanic/Latino and Black or African American categories.

2. Describe your program's staffing changes since fall 2021. How have these changes impacted your program's ability to achieve its strategic action plans?

There have been no significant changes to the faculty or staffing structure within the Mathematics Department during the current review period. The department continues to be supported by a consistent group of full-time and part-time faculty who remain committed to delivering high-quality instruction and fostering student success. The stability in faculty composition during the current review period has not hindered the ability to fulfill its strategic action plans.

The Mathematics Department acknowledges that the ethnic diversity of its faculty does not currently mirror the variety present in the student body within our classrooms. This gap offers a chance to enhance our dedication to supporting all students and should be considered when formulating our strategic action plans.

4.2 Staff Support and Professional Development

1. Describe the regular discussions your program faculty are having about equitable grading, attendance, late work, extra credit policies, and other strategies to support equitable student success.

The Mathematics Department often holds meetings to discuss pedagogy, equitable grading, programs, and policies which embrace diversity in our community. We are committed to equity for all our students and design our program to promote student success for all.

2. How have these conversations shaped practices or policies in your program? What action has arisen from these discussions? If no action has been taken, why not?

Although each instructor has the freedom to conduct their class as they see fit, we have as a

department encouraged strategies to promote equitable student success. We offer courses with a zero-cost textbook, which allows students with financial insecurity to take those courses. The information is provided prior to the start of the semester, so students can make an informed decision. Each of our courses has a course reference sheet that includes not only the content to be taught but also encourages specific grading policies. One policy that is encouraged in several courses is to either drop a student's lowest exam score during the semester or give the option to replace their lowest exam score with their grade on the final exam. This policy allows students that have one poor exam result to stay in the class and retain the possibility of passing. While we do not have specific policies on late work, we have had discussions about being sensitive to student needs in these areas.

Another step we have taken towards equitable grading and student success is the creation of specific Canvas courses available to instructors. Several of our faculty members have shared their materials to assist one another in class preparation. This can be particularly helpful to our adjunct faculty that may be teaching multiple classes at multiple locations. Having materials available helps us have a more cohesive approach to our classes among various instructors. Providing instructors opportunities to be compensated for creating shared materials would further promote collaboration and the exchange of ideas among faculty.

Our department is consistently looking for ways to increase student success for underrepresented groups. A specific result from our conversations has been a rebranding of our tutoring services. Our newly named Math & Comp Sci Tutoring Lounge (previously called the Math Lab) has gone through a transformation to encourage student participation. Besides the name change, there have been many shifts in the atmosphere of the Math & Comp Sci Tutoring Lounge: the addition of several whiteboards encourages students to work together, the class orientations are set up in a way that makes it clear that the goal of this center is to help students succeed, and there are often snacks provided students while they are there studying. The changes have resulted in more students using the facility at the start of the semester, which will hopefully result in greater student success.

Our students have the opportunity to join programs such as the STEM cohort, MESA program, and Math Success Program. These student-focused programs promote community and belonging, while supporting students in their educational goals. We encourage students to participate in the Putnam and AMATYC math competitions, as well as participate in mathematical research, to broaden their mathematical awareness and prepare them for future studies.

In response to California laws AB 705 and AB 1705, which prohibit offering remedial math courses, our department has created new courses to support students of all backgrounds. We see a trend of high school graduates entering Fullerton College without the necessary prerequisite knowledge in math. In response, we have created a Precalculus course (MATH 140), as well as multiple support courses.

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3. What additional areas of professional development could help your faculty and staff engage in this work?

As educators, our goal is to create a positive learning environment for all our students. As we strive to learn more about equitable grading, our faculty members would benefit from funding that would allow attendance at discipline-specific conferences or workshops on the topic. We will continue conversations and promote activities to help our students reach their educational goals.

Section 5: Program Planning

5.1 Progress on Previous Strategic Action Plans

1. Please discuss the goals (Strategic Action Plans, SAPs) from your last self-study. Assess and explain your progress on each of the SAP.

Strategic Action Plan #1:

Create support through workshops and/or boot camps at all levels to help remedy learning loss due to COVID-19. Boot camps, workshops, and review sessions will be led by Math faculty, as decided upon by the Math Department.

The various boot camps and workshops that the department ran were as follows:

- Summer 2022: STEM cohort boot camps
- Winter/ Spring 2023: STEM cohort boot camps and exam review sessions (workshops)
- Summer 2023: Math workshops for various courses.
- Fall 2023: STEM cohort boot camps, Administration of Justice pathway, Teacher Preparation pathway, and Math Lab workshops
- Spring 2024: STEM cohort boot camps and Math Lab workshops
- Fall 2024: STEM cohort boot camps and Teacher Preparation pathway workshop

These boot camps/workshops were funded out of the Program Review funds allocated prior to Fall 2021. These funds were received from our 2017-18 Program Review allocation, that we received in the fiscal year 2018-19. We attained these funds late, so the money was carried over at year end. Then, COVID happened, and these workshops could not be conducted. The unused funds were permitted to be carried over. For our 2021-22 Program Review, we were allocated another \$11,250 for COVID boot camps/workshops, which we received in the fiscal

year 2022-23. However, we didn't utilize the funds that year and they were carried over to fiscal year 2023-24. That money was never utilized either due to low attendance from students. While the workshops were gaining popularity in pre-COVID years, we could not substantiate paying for instructors to hold these bootcamps with attendance numbers that were typically between 0 and 5. Consequently, at the end of the year the funds were taken back.

Strategic Action Plan #2

Identify a lead teacher for each support and/or enhanced course for Statistics, College Algebra, Trigonometry, and Business Calculus. Lead teacher will create a complete set of course materials for the support course (or the additional support component of an "enhanced" course) available to all teachers of the course. The Lead teacher may offer workshops and/or mentor other teachers.

The identified lead teachers were

MATH 121 (Statistics with Support:) Nancy Ikeda and Laura Loney created the following:

- Canvas shell
- Lecture videos
- Get Ready activities and warm-up problems
- Projects and labs
- Study skills

MATH 131 (Business Calculus with Support): Kenny Shah and Dao Vo created the following:

- Canvas shell
- Lecture notes
- Extra practice with algebra review and prerequisite worksheets
- Exam reviews

MATH 143 (College Algebra with Support): Minh Bui, Caleb Petrie, Nicole Rossi and Kenny Shah

- Exam review questions and solutions
- Projects
- Extra practice including prerequisite skills
- Time management
- ALEKS individual support problems

MATH 144 Trigonometry with Support: Chris Larsen and Paul Farnham

- Created a flipped classroom
- Created videos and resource worksheets
- Created tickets-in-door pre-class worksheets
- In-class worksheets

Funds were requested and considered but were not approved. No money was allocated for the work completed. That being said, we did receive one-time AB 1705 funding from the state which allowed us to do much of this work. We also were able to create a set of shared materials for MATH 140 (Precalculus). These resources are readily available to instructors in course-specific Canvas shells.

Strategic Action Plan #3

Continue to support and impact high-impact enrichment oriented activities, such as advanced problem-solving seminars, the AMATYC Student Math League and practice sessions for it, the William Lowell Putnam Mathematical Competition and practice sessions for it, the Joint Math Club and Colloquium, and Informal Learning Seminars. Provide financial support for two to six students to work as math research outreach interns for five to ten hours per week. Ideally, these students will have completed at least one Math Seminar course successfully and will be leaders among the students in our Math Research group. These enrichment activities and financial support are known to have a high impact on students, especially for students coming from under-represented groups. Fund four to eight hours per week for one to two instructors to work with a group of four to eight students on math research problems in an in-house, year-round undergraduate research experience. Participating faculty on this project include Dana Clahane. We propose to fund \$200 as an honorarium each month (10 months) for external faculty and industry speakers on open problems and emerging applications of mathematics at the Math Colloquium, which has been institutionalized by the Math and Computer Science Division since Fall 2009 and is now a nationally recognized series of talks that feature student and university faculty speakers and community-building. We propose for talks to be funded at the same rate during the summer. Additionally, for the Pacific Summer Open Mathematics Seminar, which has been held at Fullerton College since 2010. We propose to fund two hours daily, of special extra lab/office hours in the Math Lab Annex or other suitable classroom held by faculty who are interested in helping students with challenging math problems in our advanced courses and their research projects either as ad hoc researchers or as students who are enrolled in the Math Seminar courses. Participating faculty will include and be recruited by Dana Clahane. We propose to continue funding for the overnight shipping of the Putnam Competition exams, and lunch/subsistence for the participants on the first Saturday of each December. It is very important that students do not experience food

insecurity on that date in particular as these students represent the College in this national competition. We propose to fund one to two faculty professional subscriptions to Overleaf, a collaboration and document preparation tool involving LaTeX, the current state-of-the-art typesetting for STEM. The faculty subscriptions will allow an unlimited number of students to join projects at no cost.

The Division voted to continue the Colloquia monthly at an honorarium of \$175 for each speaker. However, in the last academic year 2023-24, it was claimed that these Colloquia cannot be held during the Math Seminar classes, despite the fact that in at least one other Division, such events were being held during class, just in a different room.

For the 2021-22 Program Review, the money requested for “Continue High-Impact Seminars, Math League competitions” was as follows: personnel \$20,000; software \$720; and travel and attendance costs \$3,000, for a total of \$23,720. While \$23,720 was requested, only \$3,720 was allocated. \$720 was allocated for software and \$3,000 for conference travel and attendance. Funds were received for fiscal year 2022-23 and carried over until fiscal year 2023-24. At year end 2023-24, the money was unspent and taken back. The reason that most of this money was left unused was the low-enrollment and eventual cancellation of the Math Seminar classes. These classes did not run during COVID as they are not conducive to a Zoom teaching environment. The first semester that the seminars successfully ran was Fall 2024. The seminar classes were gaining in popularity pre-COVID, but we are continuing to work on recovery of student enrollment in these courses.

Strategic Action Plan #4

Offer more support, interventions and services to our students by using alternate models in the Math Lab. Hire additional tutors to serve in the virtual tutoring environment and as “roaming” tutors to augment the traditional model of tutoring service. Acquire space for additional interventions, such as group tutoring, workshops, boot camps, review sessions, supplemental instruction, etc.

The Math Lab was reimaged to become the Math & Comp Sci Tutoring Lounge. Computer stations were removed, allowing for more tables and chairs for students to collaborate. Assorted snacks, water, and coffee are provided to help address student food insecurity. The tables at which the students sit are no longer course specific. Students are able to sit wherever and with whomever they choose. The tutors are now roaming the center, and students display a small yellow table flag to indicate when assistance from a roaming tutor is needed. Virtual tutoring is more streamlined, and a QR code has been created to allow ease of registration and distribution to students.

\$186,480 was requested to hire tutors, however, \$0 was allocated. Due to lack of funding,

\$10,000 from more general funds was allocated and used to hire additional tutors. The majority of the tutors hired are students and usually leave after graduation. Better funding could help secure more permanent tutors.

Strategic Action Plan #5

Replace the furniture, including desks and chairs, of several classrooms to create collaborative spaces that are conducive to improved student engagement and more significant student-student and student-instructor relationships.

The requested funds for the 2021-22 Program Review were received in the fiscal year 2022-23 and used to fund furniture, new paint, new carpeting, and window blinds for classrooms 616 & 618. We received \$90,000. Total spent was:

Blinds: \$1,325.00

Furniture: \$49,779.05

Painting: \$ 9,025.00

Carpet: \$10,440.81

Total: \$70,569.86

The remaining balance of \$19,430.14 was carried over to 2024-25. During the Program Review update (2023-24), we requested and received an additional \$81,000 for fiscal year 2024-25. We used these monies to get new furniture for classrooms 621 and 623. There was approximately \$7,600 left over that was carried over to 2025-26. Combined with the \$19,430.14 from the previous furniture allocation, we used these funds to purchase new chairs for Math & Comp Sci Tutoring Lounge.

The department assumed that the allocation for classroom furniture included whiteboards to be installed in these collaborative learning rooms. No money was allocated for whiteboards. They are requested in this year's Program Review.

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2. If additional funds were NOT allocated to you in the last review cycle, how did the LACK of funds have an impact on your program?

Strategic Action Plan #4

For SAP #4, we have been using one-time AB 1705 funds to hire additional tutors, but this

money is both out and going away because we had three years to use it. Now that we have our six-unit precalculus class and calculus classes as entry points for STEM students, it is vital for our students to have access to tutors in the Math & Comp Sci Tutoring Lounge.

Strategic Action Plan #5

For SAP #5, the department assumed that the allocation for classroom furniture included whiteboards to be installed in these collaborative learning rooms. No money was allocated for whiteboards. They are requested in this year's Program Review.

SAPs

Collaborative furniture and whiteboards.

Short Description:

We aim to enhance the physical learning environment in math classrooms to better support instruction and collaborative learning with the installation of new whiteboards and the replacement of current student desks. These improvements are directed at classrooms for MATH 100 (Liberal Arts Math) and STAT C1000 (Introduction to Statistics), directly supporting our Program Review goal of improving success rates in these key gateway courses.

Measurable Outcomes:

We expect an increase in student success rates and reductions in drop rates for MATH 100 (Liberal Arts Math) and STAT C1000 (Introduction to Statistics).

College Goals:

3.1 Reduce equity gaps in first year English/Math completion

SAP Phase:

Completed

Resource Requests

Collaborative Student Desks

Enhancement:

Our goal is to have mobile, individual desks featuring swiveling tabletops. This design facilitates quick, flexible regrouping and natural interaction between students and instructors, creating a more welcoming environment for active learning strategies.

Personnel-Related:**Resource Category:**

Equipment

Quantity:

320

Unit Cost:

\$156.25

TotalCost:

\$50,000.00

Classroom Whiteboards**Enhancement:**

Replacing our damaged whiteboards is crucial for maintaining an effective learning environment. When whiteboards are clean and undamaged, students can clearly distinguish between instructor notes and marks on the board. This visual clarity directly supports learning by decreasing the chances of misinterpretation when reviewing notes outside of class and increasing students' ability to focus and grasp complex course material immediately. Note: We are calculating the price of the whiteboards per room.

Personnel-Related:

N/A

Resource Category:

Equipment

Quantity:

7

Unit Cost:

\$12,000.00

TotalCost:

\$84,000.00

Paint and Cleaning of Classrooms**Enhancement:**

Many of our classrooms are damaged, dirty, and have not been updated for years. A more welcoming environment that is comfortable to work in is vital for our students. Note: We are pricing the paint and cleaning per room.

Personnel-Related:

N/A

Resource Category:

Equipment

Quantity:

7

Unit Cost:

\$3,500.00

TotalCost:

\$24,500.00

Carpet

Enhancement:

Many of our classrooms are damaged, dirty, and have not been updated for years. A more welcoming environment that is comfortable to work in is vital for our students. Note: The carpet is calculated per room.

Personnel-Related:

N/A

Resource Category:

Adjunct Faculty

Quantity:

7

Unit Cost:

\$7,000.00

TotalCost:

\$49,000.00

Acquisition of dedicated classrooms for math courses

Short Description:

The Mathematics Department is committed to increasing student success and one constraint we have at the moment is the lack of classrooms dedicated to math instruction. It is extremely difficult to schedule our classes with the different unit amounts and different times being offered. Tuesday and Thursday are overloaded because of the Tuesday, Wednesday, and Thursday option of the new support courses created for students. We are scheduling with students in mind, and this is putting a squeeze on the rooms. With each semester, our course offerings are increasing, and we are in

desperate need of rooms.

Measurable Outcomes:

With an increase in rooms, we can increase our in-person offerings. We have consistently been forced to borrow temporary rooms for our classes and we cannot depend on this each semester. We would like to continue increasing enrollment (2-5% per semester) and cannot do so without rooms to teach in. Our in-person classes are more personal and welcoming than our online classes which will ideally help our disproportionately-impacted students. These groups include our DSS, Latinx, and Black student populations.

College Goals:

3.1 Reduce equity gaps in first year English/Math completion

SAP Phase:

Completed

Resource Requests

Acquisition of classrooms

Enhancement:

There will be more classes available for the students to take. This will provide students with more flexibility, especially if they have a part-time or full-time job or any other outside campus responsibilities. Note: Quantity denotes how many rooms we would like control over.

Personnel-Related:

Resource Category:

Facilities

Quantity:

8

Unit Cost:

\$0.00

TotalCost:

\$0.00

Increase Access to the Math Success Program

Short Description:

The goal is to significantly increase the number of students participating in the Math Success Program with more targeted outreach efforts to students in MATH 100 and STAT C1000. The

Mathematics Department will promote faculty recruitment efforts and/or incentivize participation to encourage more students to enroll in the program. The total operating cost of the Math Success Program per year is currently \$30,000. Expanding the program to serve 400 additional students each year would cost an additional \$72,400, bringing the total estimated annual program cost to \$102,400.

Measurable Outcomes:

We expect an increase in the number of students that have access to the Math Success Program, which will ultimately result in an increase in success rates in math courses.

College Goals:

3.1 Reduce equity gaps in first year English/Math completion

SAP Phase:

Completed

Resource Requests

ALEKS codes for the Math Success Program

Enhancement:

The main goals of the ASC Math Success Program are increased course retention and success, as students participate in ALEKS program modules which are specifically aligned with their math class. In fall 2025, the ASC Math Success Program had 87 students enrolled as of October 1, 2025 (49 students in-person and 38 students online).

Personnel-Related:

Resource Category:

Supplies

Quantity:

400

Unit Cost:

\$31.00

TotalCost:

\$12,400.00

Tutors for Math Success Program

Enhancement:

The program is flexible and can expand to meet student demand. However, hiring additional math tutors would allow the program to effectively serve up to 200 more students per term.

Personnel-Related:

As the program grows due to the MATH 140 course creation, there need to be more tutors hired to meet student demand. Note: We are calculating the cost PER YEAR for 8 tutors.

Resource Category:

Non-Faculty Personnel

Quantity:

8

Unit Cost:

\$7,500.00

TotalCost:

\$60,000.00

Computer Lab for Math Success Program

Enhancement:

The program is flexible and can expand to meet student demand. However, acquiring a larger lab space on campus would allow the program to effectively serve up to 200 more students per term. We are specifically requesting that the Math Success Program gains access to the 611 computer lab for their tutoring.

Personnel-Related:

Resource Category:

Facilities

Quantity:

1

Unit Cost:

\$0.00

TotalCost:

\$0.00

Classroom Technology (TI-84 Graphing Calculator Sets)

Short Description:

A Texas Instruments graphing calculator (TI-84 Plus) is required for many math classes, but the cost has become a significant financial burden for many of our students. To support the College's goal of moving toward no-cost course materials and ensuring classroom equity, we propose acquiring at least 4 full classroom sets of these calculators.

Measurable Outcomes:

We expect an increase in student success rates in our Statistics and Calculus courses.

College Goals:

2.3 Increase access to affordable course materials; 3.1 Reduce equity gaps in first year English/Math completion

SAP Phase:

Completed

Resource Requests**TI-84 Calculator Class Set****Enhancement:**

Providing this resource addresses a critical issue for students who cannot purchase a calculator immediately, whether due to waiting on financial aid disbursement or paychecks. This intervention prevents students from falling behind early in the semester, ensuring that every student has equal access to the necessary in-class resources for success. Additionally, during exam periods, students frequently rush to the library to borrow a calculator. This practice often leads to late arrivals for students whose classes begin before the library opens, causing unnecessary anxiety and stress before an already high-pressure test. Having multiple classroom sets of calculators readily available in the department will simplify logistics for these students, ensuring they can arrive on time and prepared, thereby creating a calmer, more focused exam environment.

Personnel-Related:**Resource Category:**

Equipment

Quantity:

160

Unit Cost:

\$125.00

TotalCost:

\$20,000.00
