2025 INSTRUCTIONAL ANNUAL PROGRAM PLANNING WORKSHEET

CURRENT YEAR: 2025 **PROGRAM(S): MATHEMATICS**
CLUSTER: STEM **AREA OF STUDY: STEM**
LAST YEAR CPPR COMPLETED: 2022 **NEXT SCHEDULED CPPR: 2027**
CURRENT DATE: Click here to enter a date.

The Annual Program Planning Worksheet (APPW) is the process for:

- reviewing, analyzing and assessing programs on an annual basis
- documenting relevant program changes, trends, and plans for the upcoming year
- identifying program needs, if any, that will become part of the program's **Resource Plan**, which can be downloaded from the **IPPR Program Review Documents Folder**. Please review the **Resource Allocation Rubric** when preparing the resource plan.
- highlighting specific program accomplishments and updates since last year's APPW
- tracking progress on a Program Sustainability Plan if established previously

Note: Degrees and/or certificates for the ***same*** program ***may be consolidated*** into one APPW.

This APPW encompasses the following programs of study (degrees and/or certificates):

A.S.T. Mathematics

General Program Update

Describe changes and improvements to the program, such as changes to the mission, purpose, or direction. In particular, indicate any changes that have been made to address equity gaps.

The biggest change in the Mathematics Program for the 2023-2024 academic year is the full implementation of AB 1705 requirements to eliminate all pre-transfer level math courses. Six years ago, we had 2387 students enrolled in pre-transfer level math courses. In 2022-2023, after access to transfer level math courses was opened to all students, that number was reduced to 259 students. In 2023-2024 pre-transfer level math ane English courses were eliminated, so 0 students had access to them. Shockingly, despite the elimination of pre-transfer level math courses being sold as a way to close equity gaps, the equity gaps, particularly for Hispanic/Latino students actually increased, as can be seen in our disaggregated data. It should be noted that this data excludes students who simply decided not to go to Cuesta College because they were underprepared for transfer level math and English courses, and therefore felt they did not belong in college. We look forward to the day that all California Community College students have access to the math courses they need to help them accomplish their educational goals, and again feel they belong in college. In the meantime, Mathematics Division faculty will work to minimize the negative impacts of AB 1705. An example of this work was the development of Math 227, College Mathematics for Technical

Fields which had enrollment of 141 students in 2023-2024. This class was developed to support students such as Nursing and Allied Helth students, CTE students, as well as Aviation Maintenace students. It also supports STEM students that may be underprepared for Precalculus or Trigonometry. Additionally, faculty have worked closely with MESA, the Student Success Center, and LSAMP to support all students and particularly our minoritized students. The final major change for the Mathematics Division that occurred at the end of the Spring 2024 semester was the pending addition of the Computer Science Department to the Mathematics Division, which subsequently became the Mathematics and Computer Science Division.

Program Sustainability Plan Update

Was a Program Sustainability Plan established in your program's most recent Comprehensive Program Plan and Review?

Yes ☐ If yes, please complete the Program Sustainability Plan Progress Report below.
No ☒ If no, you do not need to complete a Progress Report.

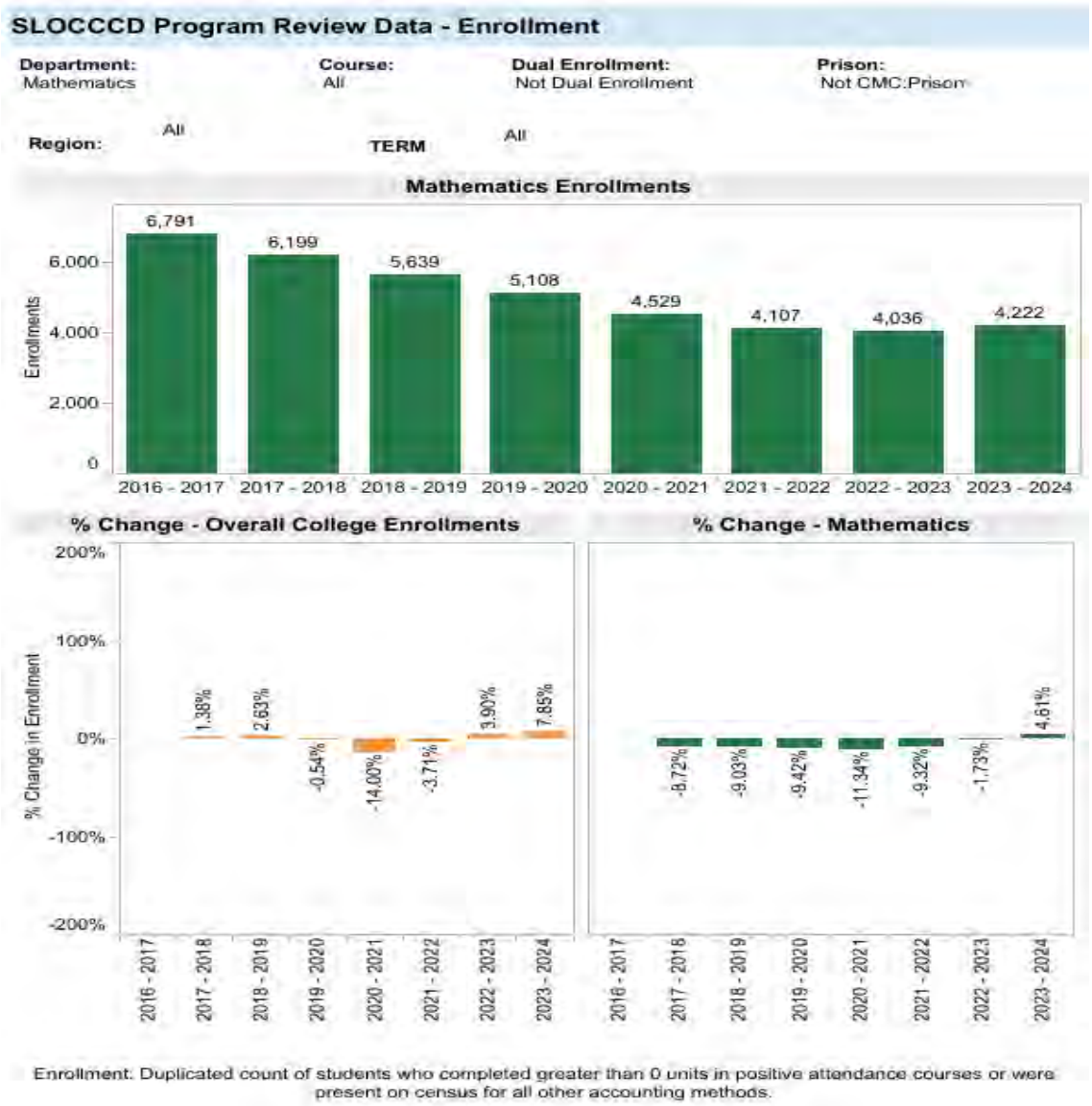
If you selected yes, please complete the Program Sustainability Plan Progress Report below after you complete the Data Analysis section. That data collection and analysis will help you to update, if necessary, your Program Sustainability Plan.

Data Analysis and Program-Specific Measurements

Your responses to the prompts for the data elements below should be for the entire program. If this APPW is for multiple degrees and/or certificates, then you MAY want to comment on each degree and/or certificate or discuss them holistically for the entire program being sure to highlight relevant trends for particular degrees and/or certificates if necessary. Responses in this document need only reference the most recent year's available data.

A. **General Enrollment (Insert Aggregated Data Chart)**
   Insert the data chart and explain observed differences between the program and the college.

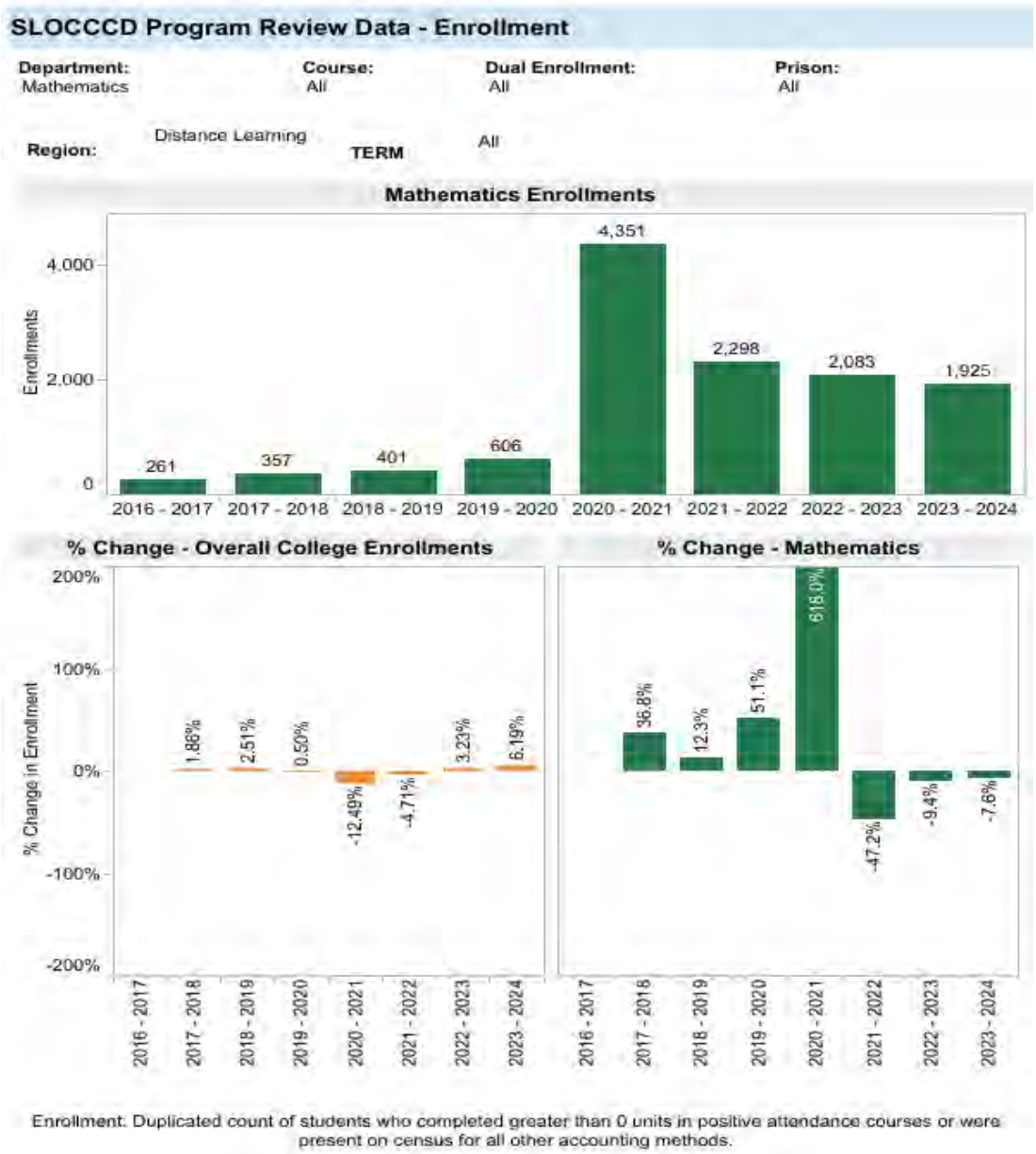
Math Enrollment (Excluding CMC and Dual Enrollment for all Data)



Enrollment: Duplicated count of students who completed greater than 0 units in positive attendance courses or were present on census for all other accounting methods.

Despite the elimination of pre-transfer level math courses in 2023-2024, the Math Division had the first increase in overall enrollments in seven years. The development of Math 227, and the corresponding 141 enrollments in that course certainly helped overall enrollment. Additionally, the increase in overall college enrollment of 7.8% supported the growth in the Math Division. It will be interesting to see if the increase in enrollment in math courses continues in the 2024-2025 academic year, particularly as AB 1705 implementation for STEM preparatory courses is implemented.

Online Math Course Enrollment



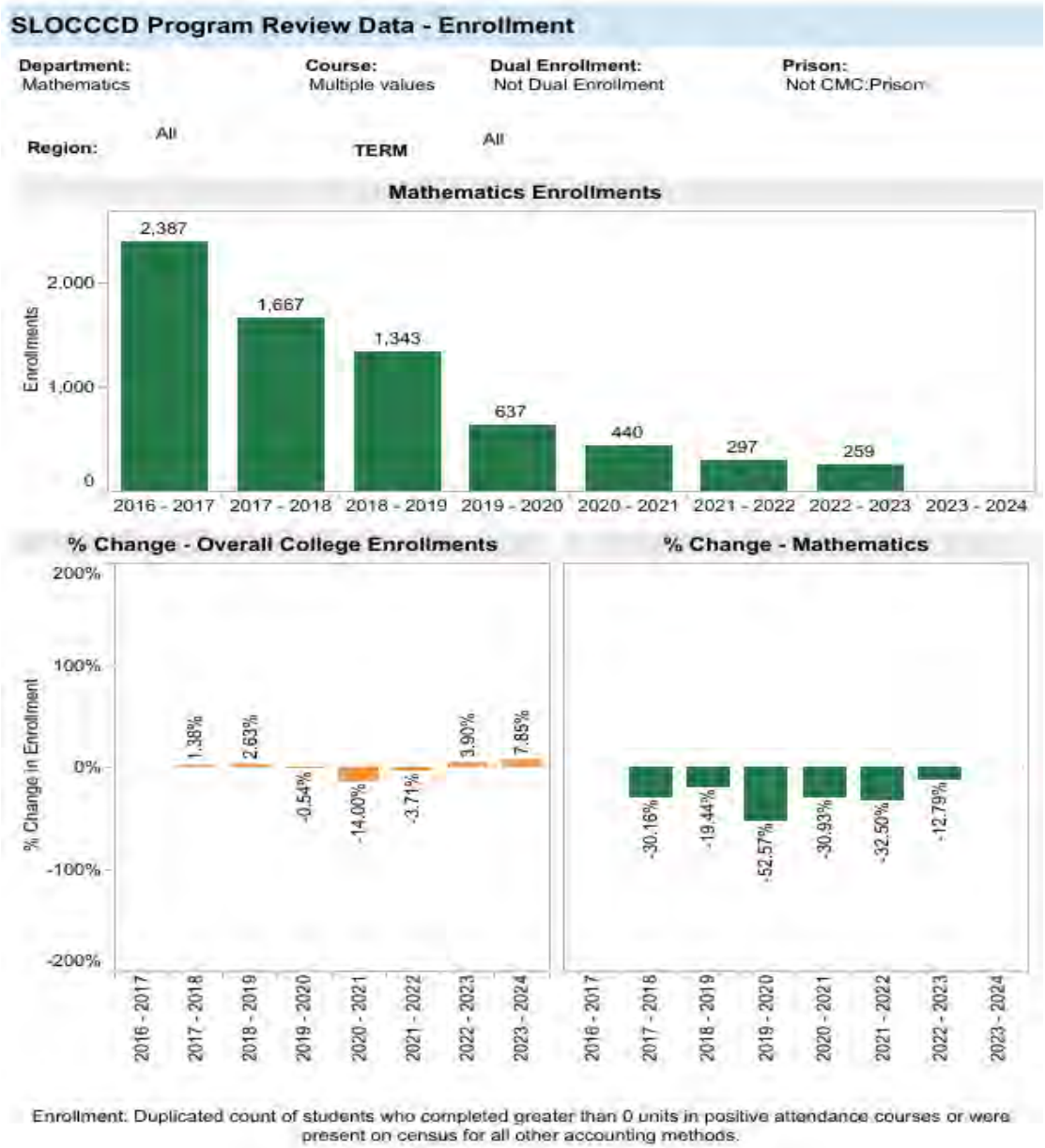
Enrollment: Duplicated count of students who completed greater than 0 units in positive attendance courses or were present on census for all other accounting methods.

Transfer Level Math Enrollment

Enrollment: Duplicated count of students who completed greater than 0 units in positive attendance courses or were present on census for all other accounting methods.

Transfer level enrollments have significantly increased over the last two years, outpacing the increase in overall college enrollment in that time frame. This is likely impacted by the reduction and ultimate elimination of pre-transfer level math courses. Now all students must take a transfer level math course, despite their academic history or preparedness. It should also be noted that the 2023-2024 academic year had the largest transfer level math enrollment in the last eight years, also likely due to the elimination of pre-transfer level courses. Although it is great to see so many students enrolled in transfer level math, the concern is that students who are not successful in those courses do not have the option to take a pre-transfer course that could prepare them for success in their transfer math course.

Pre-Transfer Level Math Enrollment (Math 003, 007, 123, 127, 128)

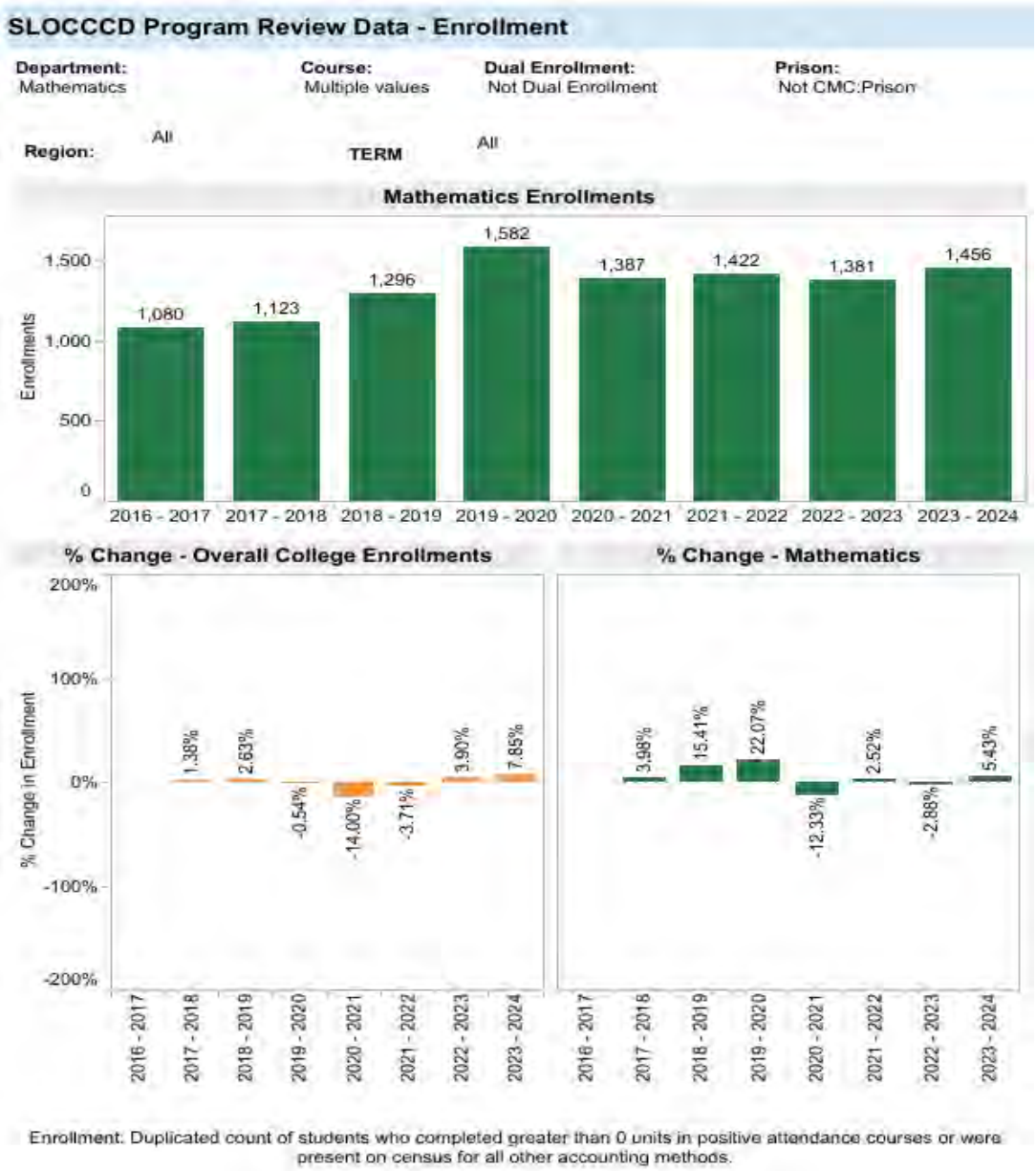


Enrollment in all pre-transfer courses has steadily declined since 2017 and vanished completely in 2023/2024. This would normally be a cause for concern, however, it's not a reflection of the quality of our pre-transfer classes or of decreasing student demand, nor is it because these classes don't benefit students, because they do. It's because state law, AB705 and AB1705, and the chancellor's office have discouraged the offering of sections of these courses since 2017 and in Fall 2023 eliminated all pre-transfer level math class offerings, and that is a cause for concern.

College Mathematics for Technical Fields, Math 227

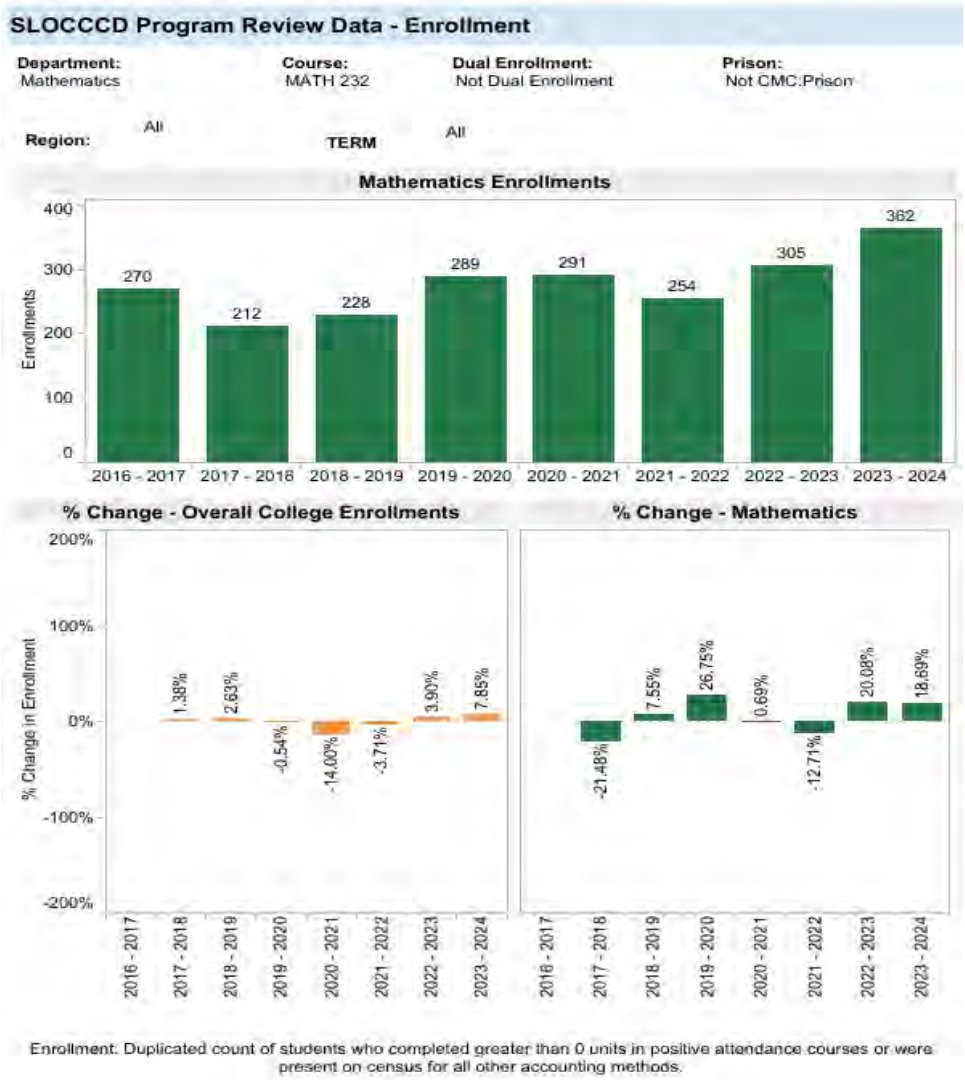
We first offered this class in 2023/2024 and had a total enrollment of 141 students for the year. This class was created to replace our Beginning and Intermediate Algebra classes, which were eliminated due to AB1705, because Intermediate Algebra was the math requirement for many CTE programs. We are happy to have a strong enrollment in the first year of offerings, but we hope that it will increase because it doesn't match the enrollment in our Intermediate Algebra class during the years that students were no longer required to take it and were enrolling in it by choice. With time we can get the message to more students that this class was designed to serve those who would have chosen to enroll in Intermediate Algebra or even Beginning Algebra.

Statistics Enrollment (Math 247 and 236)



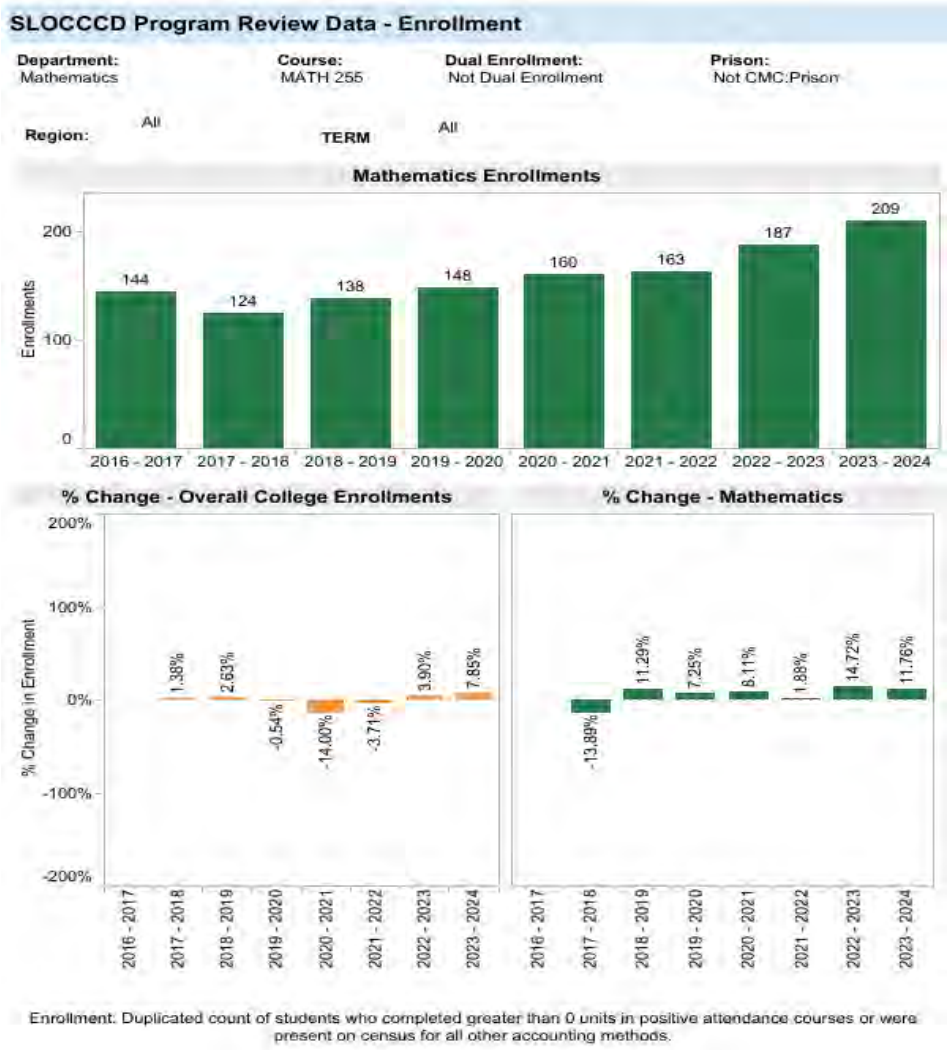
Enrollment: Duplicated count of students who completed greater than 0 units in positive attendance courses or were present on census for all other accounting methods.

College Algebra, Math 232



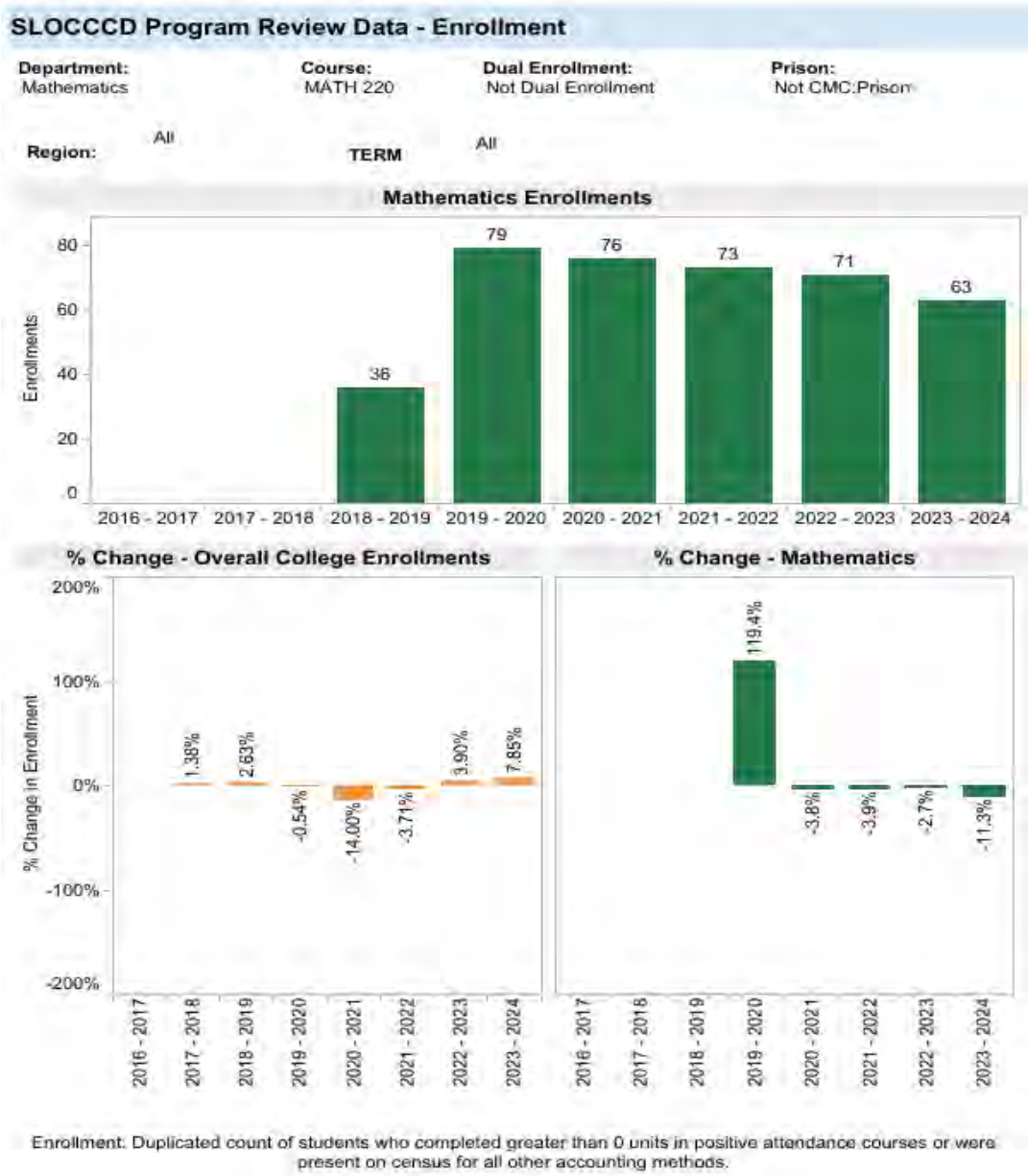
The enrollments in Math 232 have been increasing. The beginning of the trend of larger enrollments coincided with both college algebra being added as an alternative easier prerequisite for business calculus and the implementation of AB705 which allowed direct enrollment into first tier transfer level courses. Prior to AB705 implementation in Spring 2019, most business students had to begin in pretransfer level algebra classes before even having the opportunity to take the previously required business calculus prerequisite of precalculus. Other majors take college algebra, but the current dominant population are business majors.

Business Calculus: Math 255



Business Calculus has seen a significant growth in enrollments. The 2019 simultaneous addition of college algebra as a prerequisite course (instead of the more difficult precalculus) as well as the AB705 implementation where students no longer had to repeat pre transfer algebra taken in high school, significantly increased the number of students who were successfully eligible to enroll for business calculus when prerequisites were enforced for Math 255. With the implementation of AB1705, students are now able to directly enroll in business calculus regardless of math background. We have noticed an increased interest in business calculus in Spring 2025 as compared to Spring 2024, with AB1705 a likely contributor. Math 255 has been successfully added to North County spring schedule and there was an additional online section added.

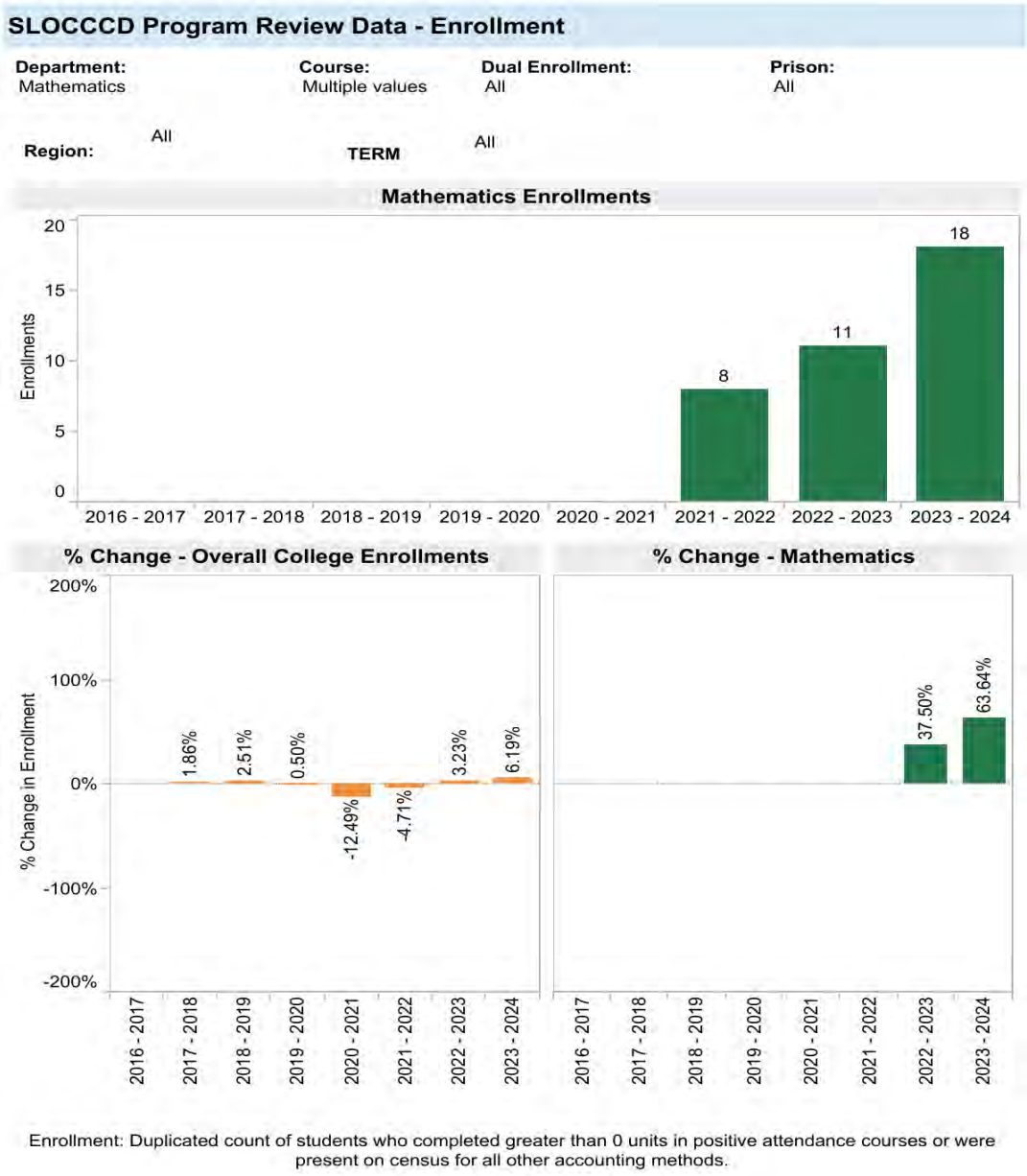
Math 220 Enrollment



Enrollment. Duplicated count of students who completed greater than 0 units in positive attendance courses or were present on census for all other accounting methods.

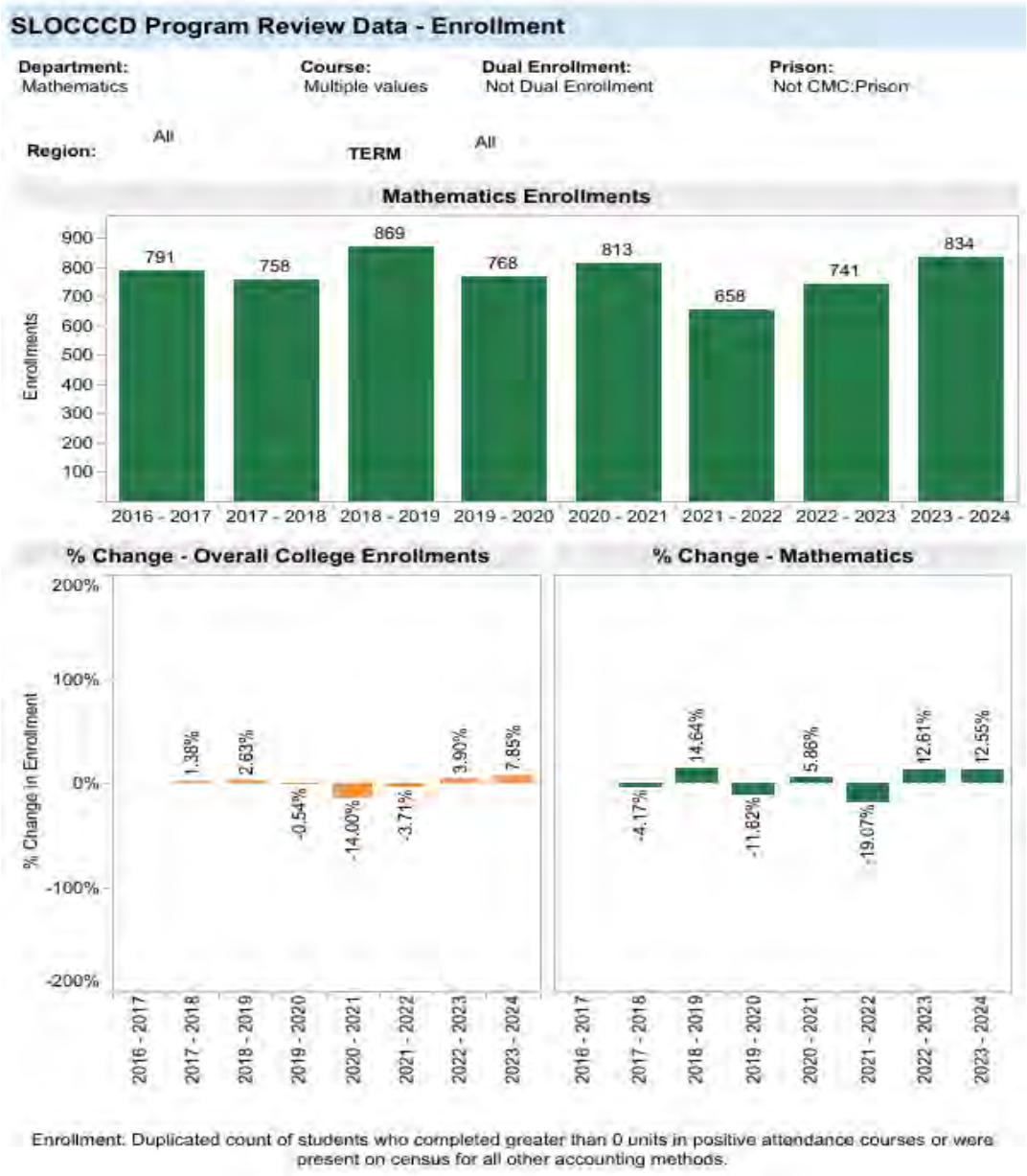
As seen in the chart above, the peak year for Math 220 enrollment was 2019-2020 and it has declined by a few students (3-4%) each year with the sharpest decline in 2023 – 2024 (8 students or 11%). This is probably due to offering the course mostly in person with a synchronous online course as well. In-person, hybrid courses are currently being offered at both courses, but the enrollments have consistently been in the teens. However, there is now a fully asynchronous Math 220 course that has been full both times it's been offered. The numbers should improve for the next academic year

Math 290, 291 Enrollment



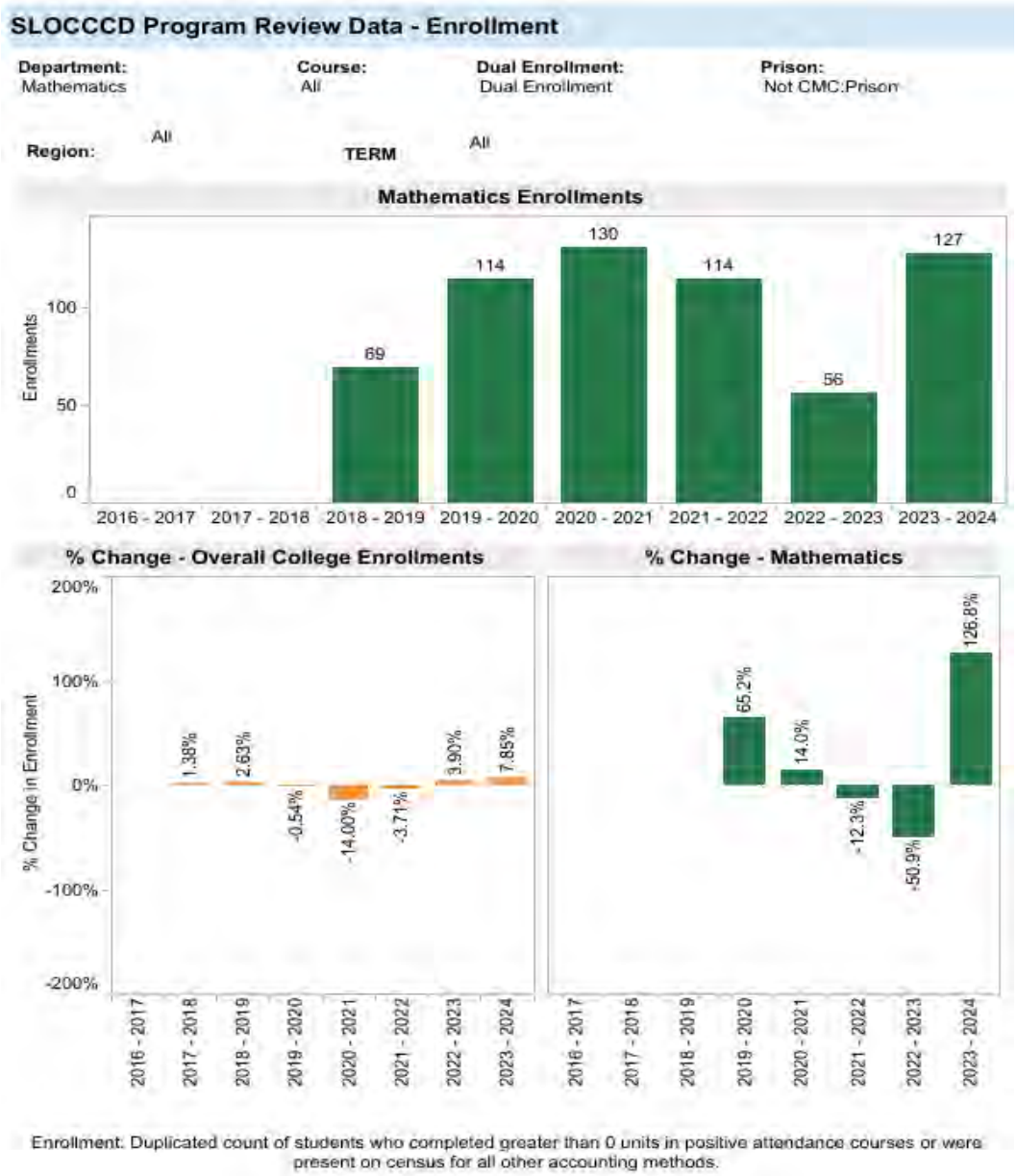
Math 290, 291 continued to see increased enrollment with a 63.6% increase in 2023-2024 with additional students conducting exciting and important research.

STEM Calculus: Math 265A, 265B, 283, 287



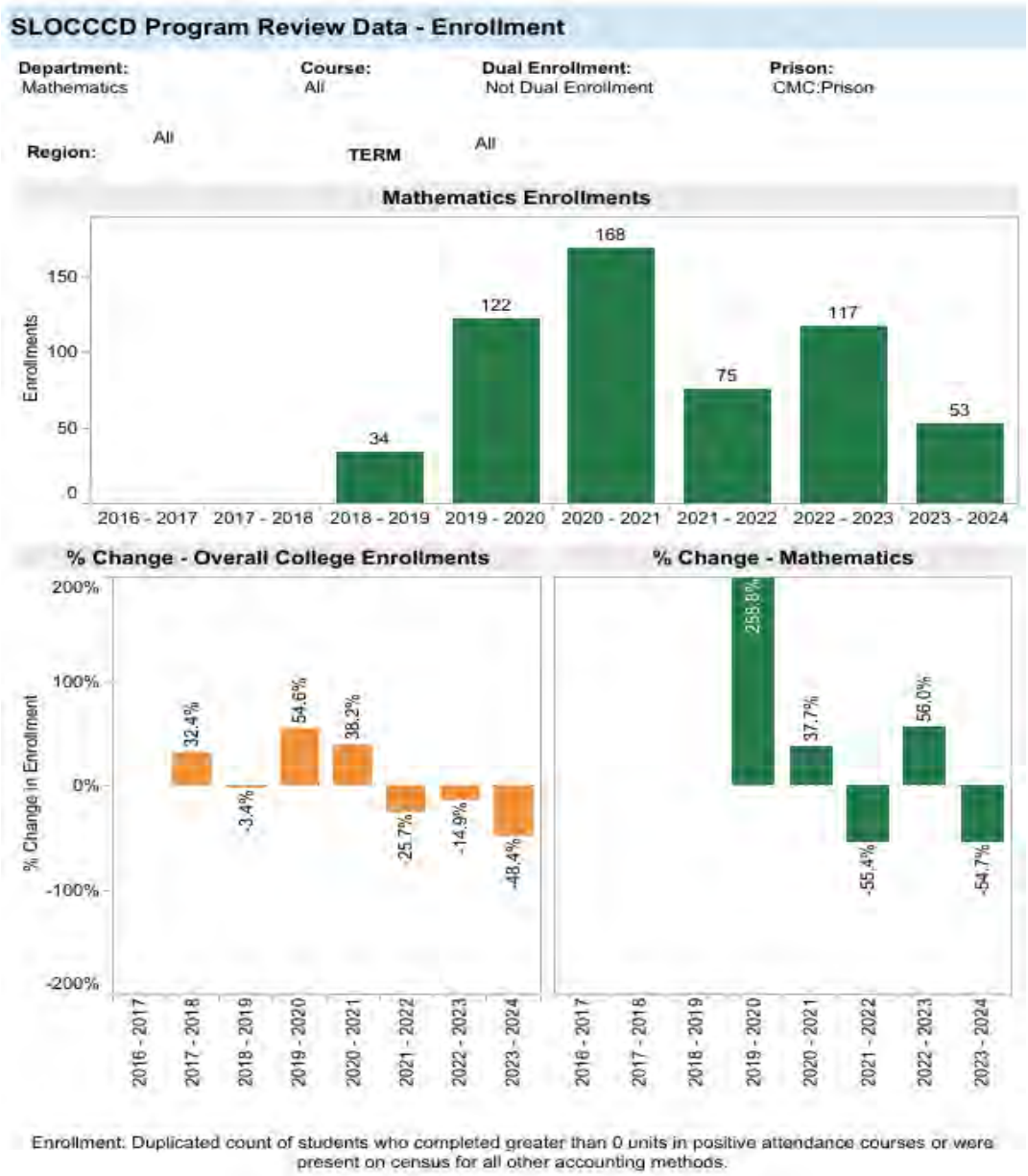
Enrollment in the STEM Calculus sequence continues to increase, paralleling the increase in Math enrollment in general. Last year the STEM Calculus sequence enrollment was 8% above the average enrollment of the previous 7 years and nearly reaching the level of 2018-2019

Dual Enrollment



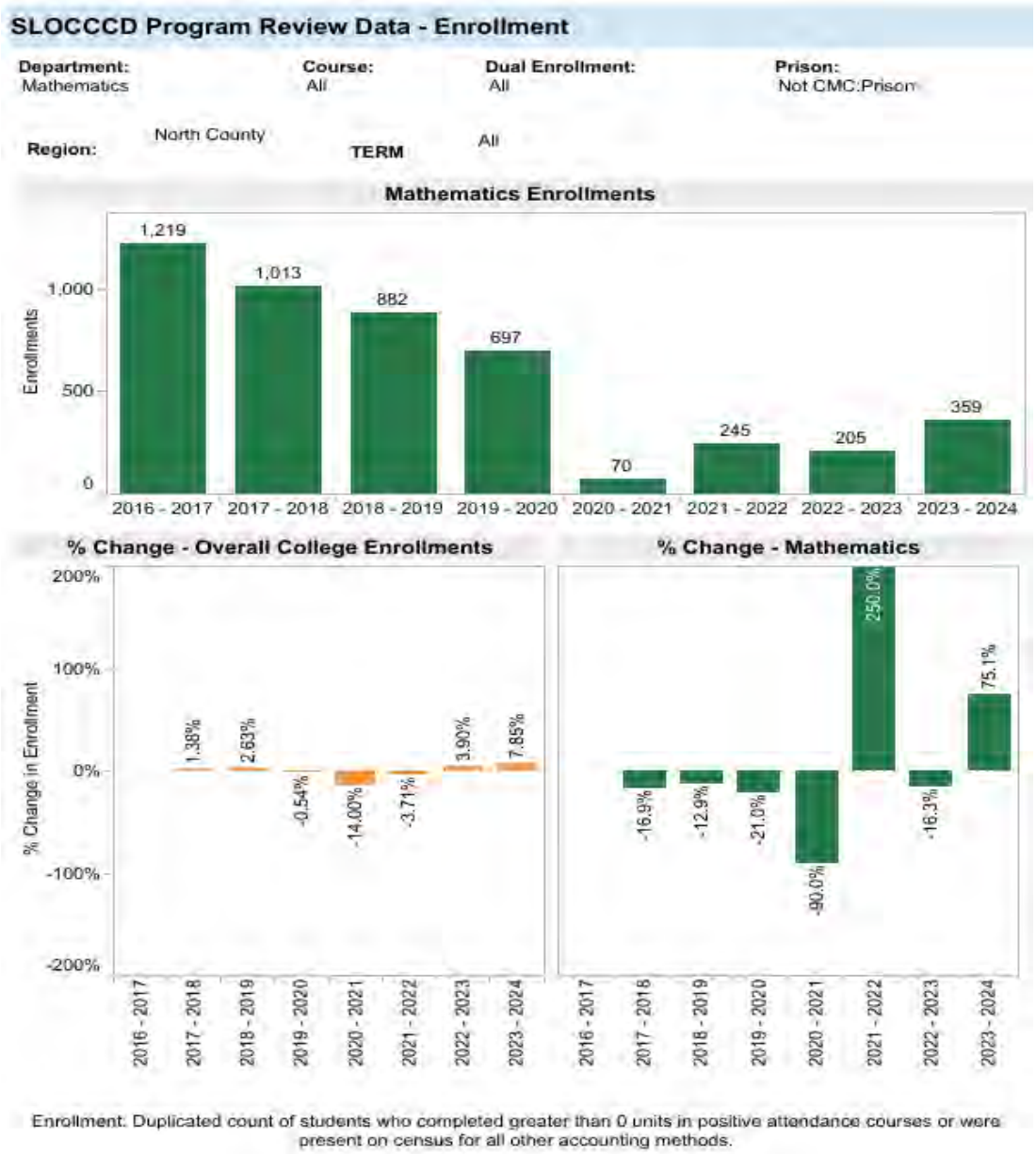
Dual Enrollment had a huge rebound in the 2023-2024 academic year with the addition of Math 230 and Math 247 CCAP courses at Paso Robles High School, as well as additional sections of Math 242 at Atascadero High School. This led to an increase in enrollment of over 126%. The division hopes to continue this trend with potential dual enrollment courses at New Tech High School and SLO Classical Academy. The division continues to explore the possibility of Cuesta Led Dual Enrollment courses, but has yet to receive a request for such courses from any local high schools.

CMC Enrollment



CMC enrollment declined in 2023-2024 as enrollment patterns based on the closure of one half of the facilities have been fluctuating. With new leadership of the CMC program, enrollments should become more predictable and potentially increase.

North County Enrollment

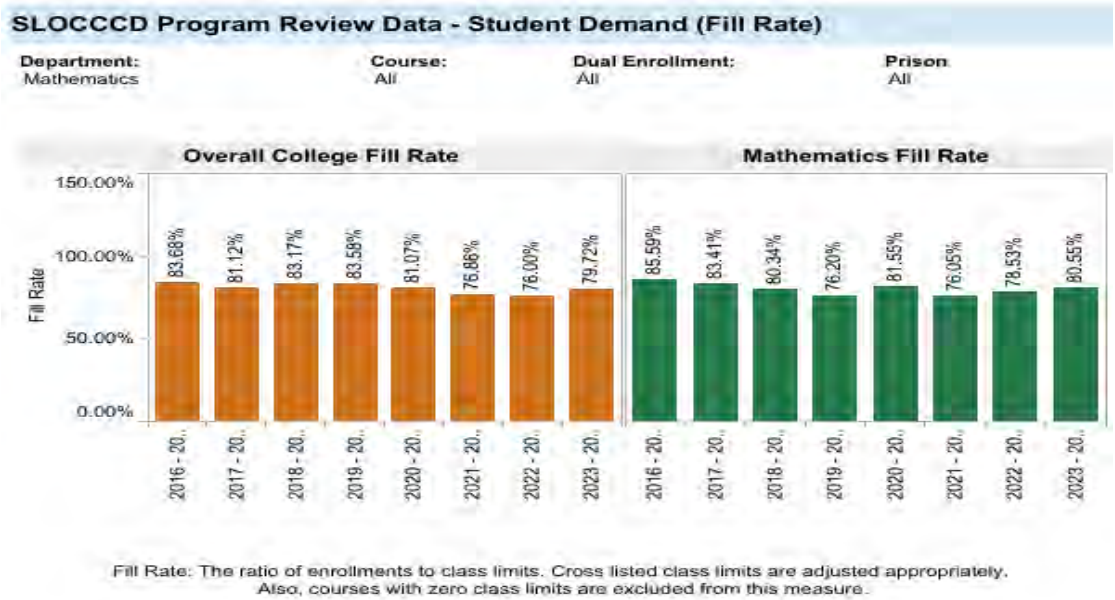


The decline in enrollment in Math classes on the North County Campus continues to be a problem. Since most of the classes offered on the NC campus have historically been pre-transfer level classes, the passage of AB705 and AB1705 resulted in us no longer being able to offer the majority of our normal schedule. This left us with very few options on the schedule. Additionally, due to the pandemic, there has been a significant increase in Distance Education classes offered by the Math department, and we lost even more students because many of our students are now choosing to take their classes remotely. One bright spot is that 2023-2024 saw a 75% increase in enrollment over 2022-2023, giving us the highest enrollment since the pandemic and the implementation of AB1705. We are still trying to figure out which classes have the greatest likelihood of attracting

students. In addition to Math 247: Statistics and Math 230: Math for Humanities, which we have always offered, we now consistently offer Math 232: College Algebra and once a year we offer Math 220: Math for Elementary School Teachers. Math 227: College Math for Technical Fields did not find the audience we were expecting, due in part to another program eliminating math from their prerequisites for applying. For now, we have stopped offering it. Our new hope is that Math 255: Business Calculus will become a consistent course in the Spring semesters.

B. **General Student Demand (Fill Rate) (Insert Aggregated Data Chart)**

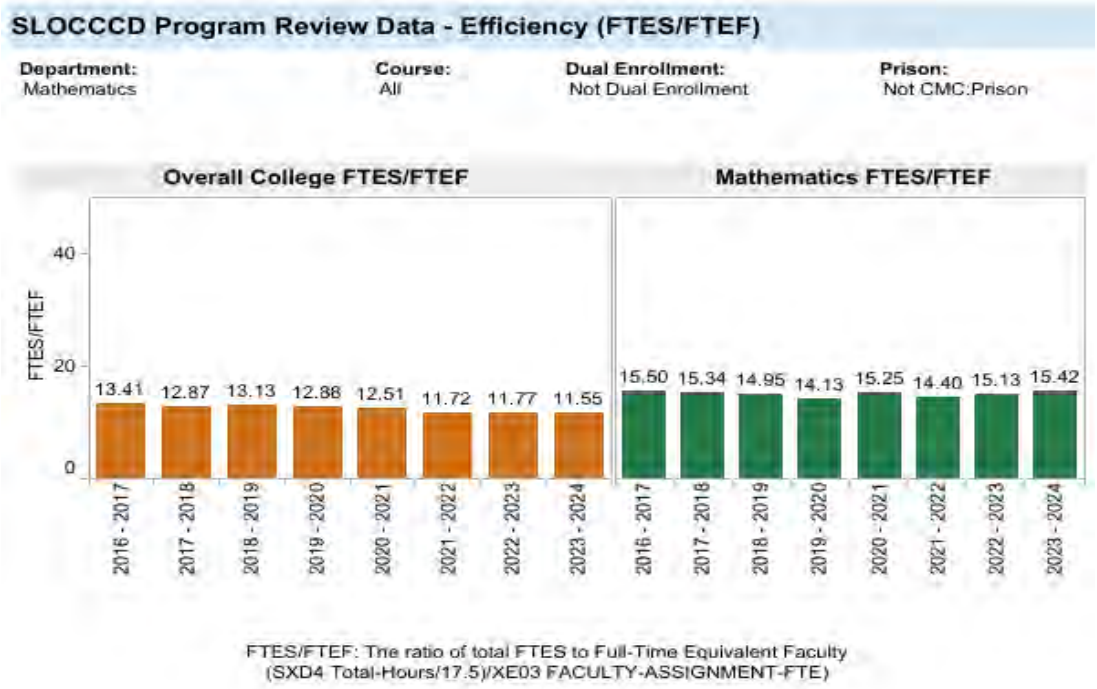
Insert the data chart and explain observed differences between the program and the college.



Math course fill rates continue to exceed those of the college as a whole, although the gap between the division and the college is closing. One challenge to increasing fill rates is the constant change in course offerings. It is very difficult to predict enrollment patterns when courses are removed from the schedule and the division tries to anticipate which math courses those students will choose instead of the previously offered course. Once there is consistency in our course offerings, the division will have the data required to adjust the number of sections of particular course based on previous enrollment patterns, which should lead to an increase in fill rates.

C. **General Efficiency (FTES/FTEF) (Insert Aggregated Data Chart)**

Insert the data chart and explain observed differences between the program and the college.

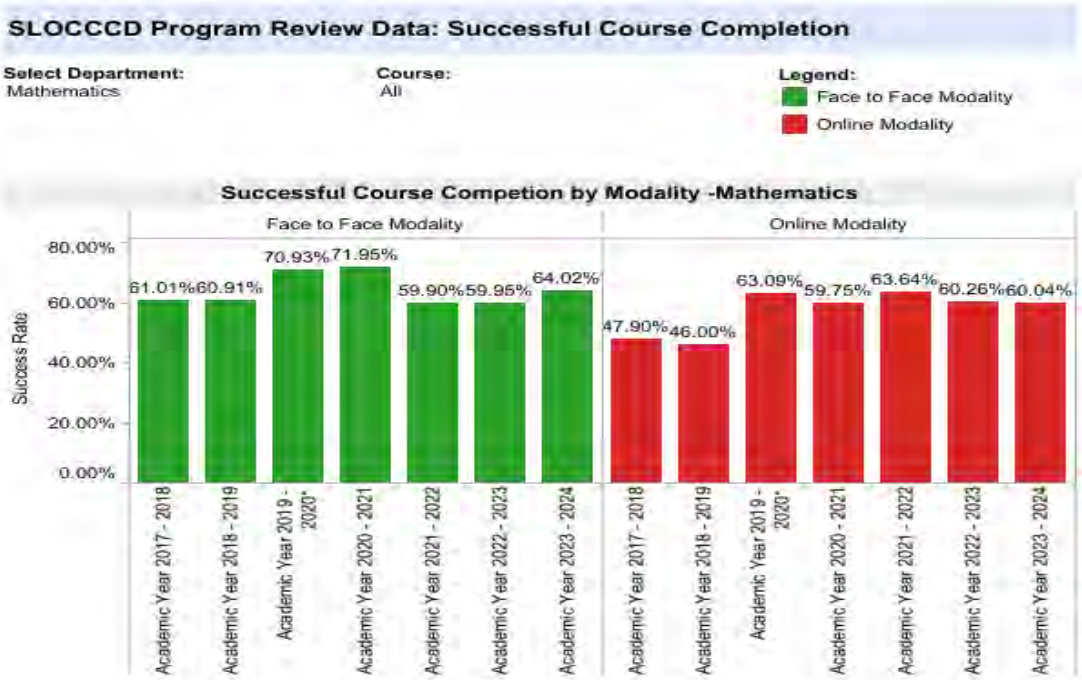


Although overall college efficiency continues to decline, the Math Division efficiency continues to increase and reached the highest level in seven years at 15.42%. It should be

noted that the Math Division efficiency was 34% higher than the college as a whole.

D. **Student Success—Course Completion by Modality (Insert Data Chart)**
Insert the data chart and explain observed differences between the program and the college.

Successful Course Completion by Modality all Math Courses



Successful Course Competion by Modality Table - Mathematics

		Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022	Academic Year 2022 - 2023	Academic Year 2023 - 2024
Face to Face Modality	Department S..	61.01%	60.91%	70.93%	71.95%	59.90%	59.95%	64.02%
	Total Depart..	5,372	5,096	4,701	476	2,000	2,127	2,480
Online Modality	Department S..	47.90%	46.00%	63.09%	59.75%	63.64%	60.26%	60.04%
	Total Depart..	357	401	606	4,352	2,298	2,088	1,929

As success rates for face-to-face courses have increased over the last three years, post pandemic, success rates for online courses decreased over that same period. For the first time since 2020-2021, success rates for face-to-face courses exceeded success rates for online courses. One of the primary drivers of this trend can be seen in the table below

that shows a decline in success rates for the online Calculus I and II courses from 68% in 2021-2022 to 34% in 2023-2024. This is a remarkable decline in success rates which correlates to the implementation of face-to-face exams in the online Calculus courses. It should be noted that the Math Division is strongly committed to academic integrity for our sequential Calculus courses as evidenced by the requirement of in-person exams. The division will need to follow the success rate trends for our online Calculus courses to determine if the modality is beneficial for our students.

Successful Course Completion by Modality Statistics

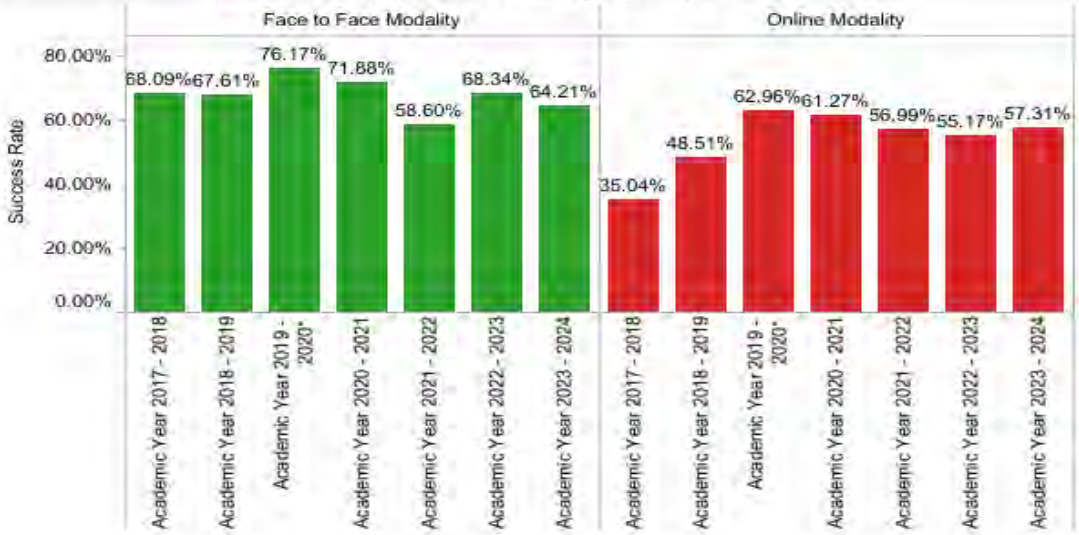
SLOCCCD Program Review Data: Successful Course Completion

Select Department: Mathematics

Course: MATH247

Legend: Face to Face Modality, Online Modality

Successful Course Competion by Modality -Mathematics



Successful Course Competion by Modality Table - Mathematics

		Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022	Academic Year 2022 - 2023	Academic Year 2023 - 2024
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	Total Depart..	357	401	606	4,352	2,298	2,088	1,929

Successful Course Completion by Modality, Business Calculus

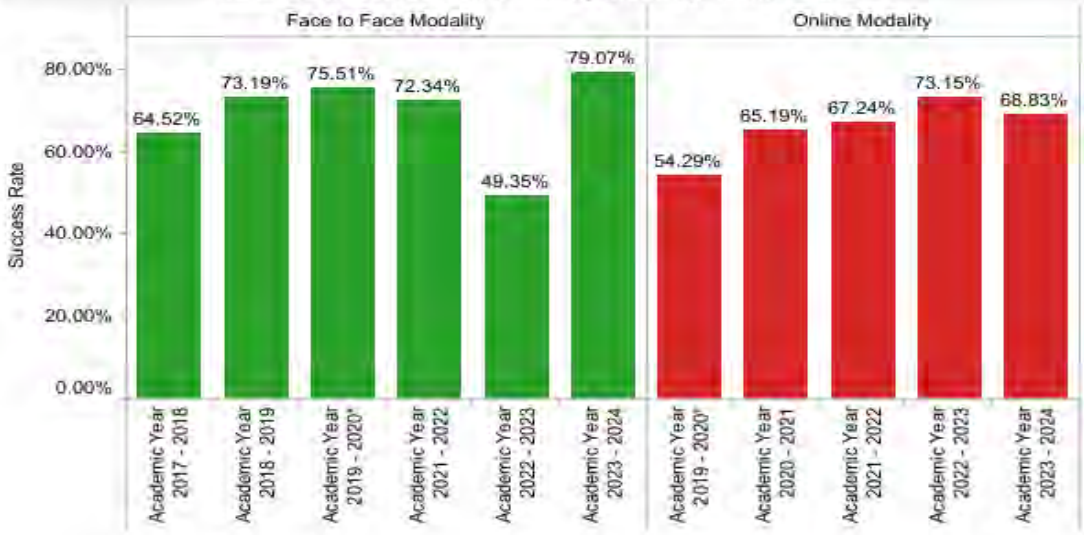
SLOCCCD Program Review Data: Successful Course Completion

Select Department: Mathematics

Course: MATH255

Legend: Face to Face Modality, Online Modality

Successful Course Competion by Modality -Mathematics



Successful Course Competion by Modality Table - Mathematics

		Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022	Academic Year 2022 - 2023	Academic Year 2023 - 2024
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	Total Depart..	5,372	5,096	4,701	476	2,000	2,127	2,480
Online Modality	Department S..	47.90%	46.00%	63.09%	59.75%	63.64%	60.26%	60.04%
	Total Depart..	357	401	606	4,352	2,298	2,088	1,929

Successful Course Completion by Modality, Math 265A and 265B

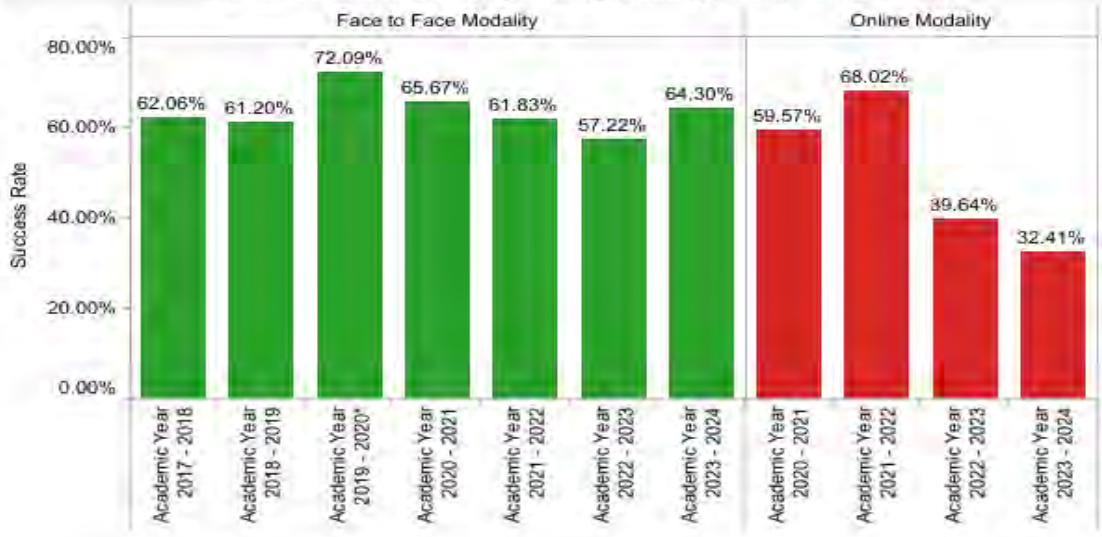
SLOCCCD Program Review Data: Successful Course Completion

Select Department: Mathematics

Course: Multiple values

Legend: Face to Face Modality, Online Modality

Successful Course Competion by Modality -Mathematics



Successful Course Competion by Modality Table - Mathematics

		Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022	Academic Year 2022 - 2023	Academic Year 2023 - 2024
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Online Modality	Department S..	47.90%	46.00%	63.09%	59.75%	63.64%	60.26%	60.04%
	Total Depart..	357	401	606	4,352	2,298	2,088	1,929

Prior to 2019-2020, we offered Math 123, 127, 232, and 247 online. After the acute stage of the pandemic, the Mathematics Division significantly increased online offerings, in line with the rest of the college. This is indicated by the jump from 606 students online in 2019 to 2,298 in 2021-2022. We maintain online offerings of Math 229, Math 230, Math 242, Math 255, Math 265A, and Math 265B that make it challenging to compare to years prior to 2020 without encountering several lurking variables. One point worth noting is that division-wide, we continue to experience significant issues with academic dishonesty in online courses that have online assessments. With the rise of ChatGPT and other AI engines, academic dishonesty has increased significantly. In response to these concerns, we shifted our Calculus courses to utilizing face-to-face, proctored exams between 2021-

2022 and 2022-2023. Assessment methods in online courses outside Calculus are left entirely up to instructor discretion and are not uniform.
After all the courses in Calculus were switched to having mandatory face-face assessments in 2022-2023, the success rates have fallen significantly (from 68% to 39% and trending down to 32%). This could be due to the lingering effects of pandemic era math education building an overreliance on using AI and other methods of academic dishonesty to complete coursework. An overreliance on AI leads to weaknesses in foundational math courses that linger and create issues for students in Calculus.

Additionally, it is worth noting that AB1705 removed Math 127 and reduces the number of students who take Math 242 and Math 229. In doing so, this funnels more students into our online Math 265A and Math 265B courses for the 2023 and 2024 school years. This may additionally have contributed to the sharp decrease in student success rates in the 2024 school year (down from 39% to 32%). Another important note is that the success rates for Math 283 have increased after moving all the online Math 265B courses to face to face assessments.

While the Math 265A and Math 265B success rates online are not ideal, counseling has repeatedly requested that these courses are offered every semester in the online modality to accommodate student scheduling demands.

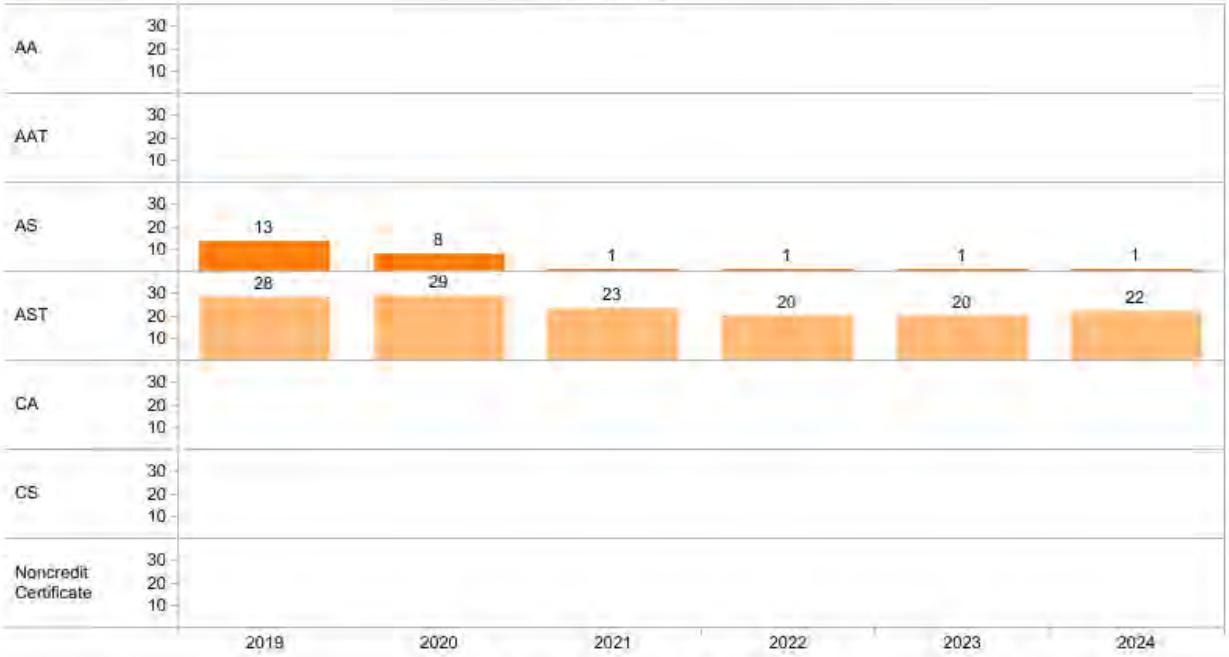
E. **Degrees and Certificates Awarded (Insert Data Chart)**

Insert the data chart and explain observed differences between the program and the college.

SLOCCCD Program Review Data: Degrees and Certificates Awarded

Program: Mathematics, General
Award Type: All
Area of Study All

Program Awards
Top Code Description(s): Mathematics, General
Award(s): All



Program Awards Table

Award Type	Award	2019	2020	2021	2022	2023	2024
AS	Mathematics (AS)	13	8	1	1	1	1
	Total	13	8	1	1	1	1
AST	Mathematics (AST)	28	29	23	20	20	22
	Total	28	29	23	20	20	22
Grand Total		41	37	24	21	21	23

Program Awards: The number of degress and certificates awarded by program type

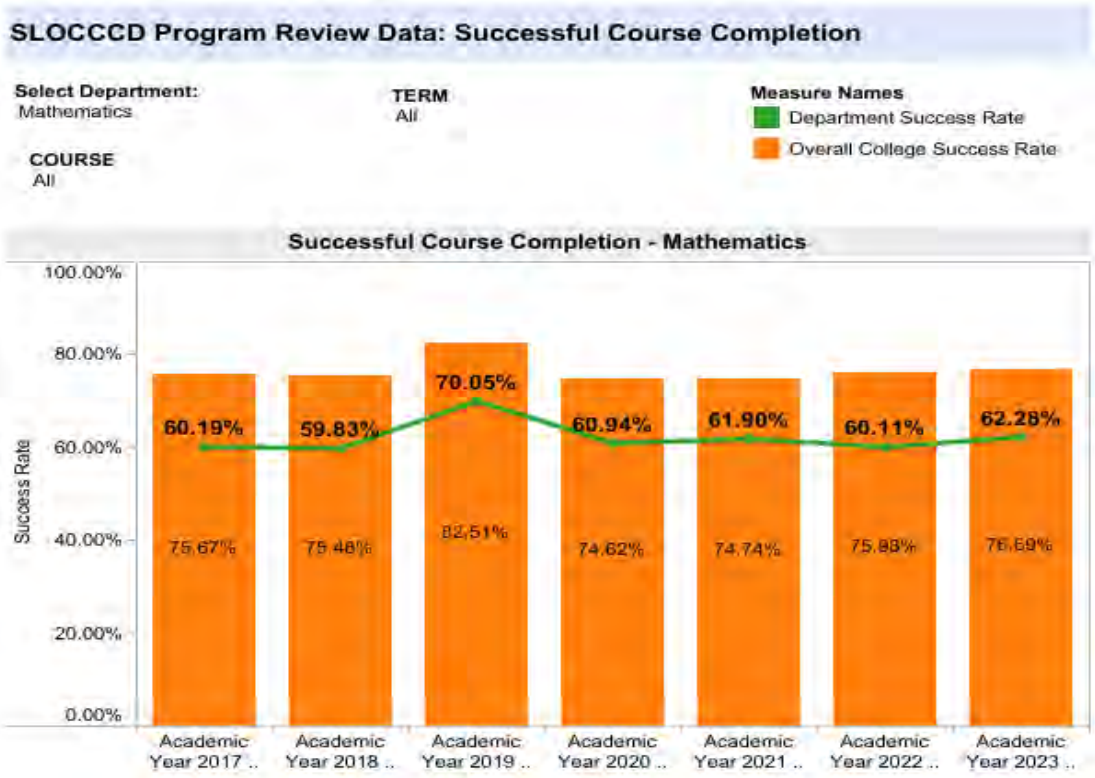
The number of AST Math degrees that have been awarded has stayed relatively consistent the last four years with numbers ranging from 20 to 23 degrees. Although this is relatively small compared to other more popular fields, the fact that we are not seeing anything unusual should be noted. The number of AS Math degrees is small due to it no longer being available to new students and only those with catalogue rights are eligible to be awarded the degree at this point.

F. **General Student Success – Course Completion (Insert Aggregated Data Chart)**

Insert the data chart and explain observed differences between the program and the

college.

Math Successful Course Completion



Mathematics Success Rate Table

	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022	Academic Year 2022 - 2023	Academic Year 2023 - 2024
Department Success..	60.19%	59.83%	70.05%	60.94%	61.90%	60.11%	62.28%
Total Enrollments	5,729	5,497	5,307	4,828	4,298	4,215	4,409

Success: The Percentage of student enrollments resulting in a final grade of "C" or better

From the bar graph and table, it is clear that the overall student success rate in mathematics courses has remained very stable over the past 7 academic years, with the exception of 2019-2020 when we were in the midst of the pandemic and numerous special exceptions were made for students which temporarily inflated the rate by about

10%. The same is true for the college as a whole. The significant difference is that the college average success rate is 75.53%, while the rate for mathematics is about 15% lower with an average of 60.87% (not counting the pandemic year).

According to available data, success rates in college mathematics courses over the past 50 years have remained relatively low, with a national average pass rate for College Algebra hovering around 50%. Although the average success rate at Cuesta is on the higher end of the national spread, it is not a figure we are comfortable accepting, and we have continually made efforts to try to improve upon our success rate.

Most recently, AB 705 and AB 1705 were passed in an attempt to close equity gaps and increase the pass rate of students in college math courses. AB 705 went into effect in 2018 just prior to the pandemic. AB 1705 went into effect in 2022. The Mathematics and Computer Sciences Division has worked hard over the last 7 years to implement the changes mandated by these bills, but as of yet we have not seen any major increase in our overall success rate.

Successful Course Completion Math 220, 229, 230, 232, 242, 247 (Tier 1)

SLOCCCD Program Review Data: Successful Course Completion

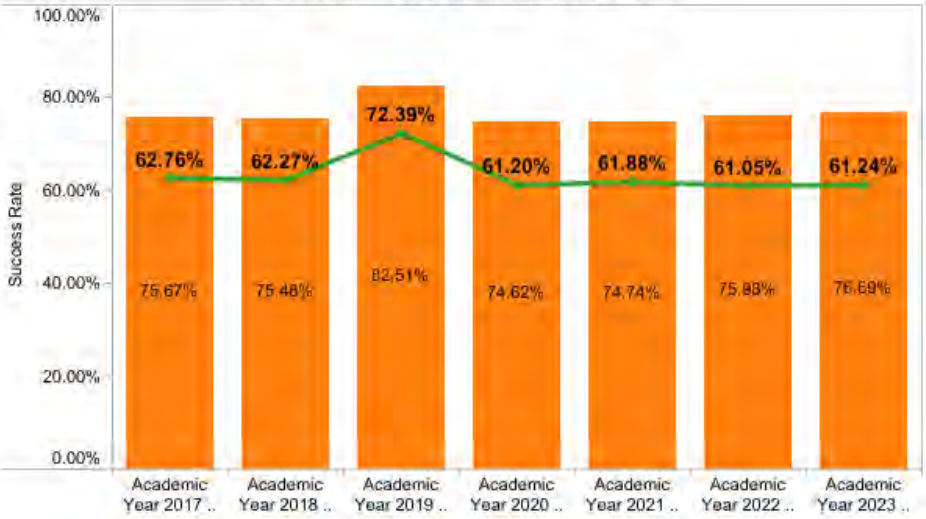
Select Department: Mathematics

TERM All

COURSE Multiple values

Measure Names
- Department Success Rate
- Overall College Success Rate

Successful Course Completion - Mathematics



Mathematics Success Rate Table

	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022	Academic Year 2022 - 2023	Academic Year 2023 - 2024
Department Success..	62.76%	62.27%	72.39%	61.20%	61.88%	61.05%	61.24%
Total Enrollments	2,269	2,708	3,317	2,961	2,809	2,843	3,228

Success: The Percentage of student enrollments resulting in a final grade of "C" or better

The success rate for our first-tier transfer level courses stays at a nearly constant rate between 61% and 63% whereas the success rate for the division stays at a nearly constant rate between 59% and 63%. This is not counting 2019-2020 where the Covid-19 lockdowns mucked up the data in spring 2020. The success rate for math is always at least 12% BELOW the overall college rate. Math is hard and we expect to see this gap. If we didn't see this gap, then we are NOT doing our jobs correctly. AB705 and government lockdowns have created a higher number of unprepared students, and this might perplex us when we see the nearly constant success rate in our first-tier transfer courses. However, these first-tier transfer courses include Math 220, Math 230, and Math 247 which don't need heavy algebra for the student to complete. If we were to investigate Math 242, I would expect to see a drop in the success rates over the last several years. If that's not the case, then consider another important factor. When a potential unprepared student looks at course finder and does not see prealgebra, beginning algebra, and intermediate algebra, there is a good chance that student will avoid a more technical educational path or will just avoid college all together. So, we have a different student population in some of our first-tier math courses (like Math 229, Math 231, Math 232, and Math 242) than we did 5 years ago. This could account for the nearly constant success rate in our first-tier transfer level courses.

Successful Course Completion Math 247

SLOCCCD Program Review Data: Successful Course Completion

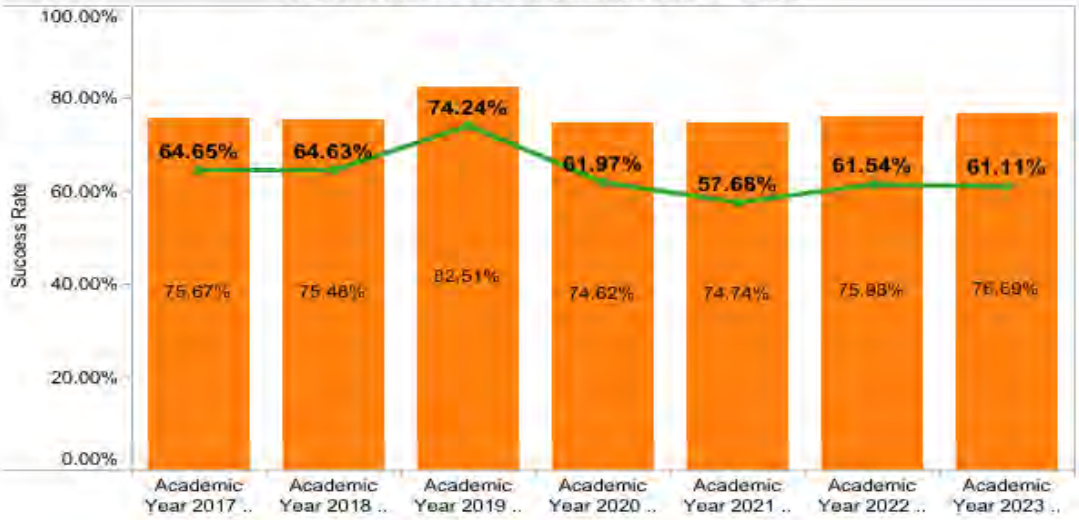
Select Department:
Mathematics

TERM
All

Measure Names
Department Success Rate
Overall College Success Rate

COURSE
MATH247

Successful Course Completion - Mathematics



Mathematics Success Rate Table

	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022	Academic Year 2022 - 2023	Academic Year 2023 - 2024
Department Success..	64.65%	64.63%	74.24%	61.97%	57.68%	61.54%	61.11%
Total Enrollments	1,123	1,296	1,678	1,471	1,451	1,413	1,538

Success: The Percentage of student enrollments resulting in a final grade of "C" or better

Statistics success rates were around 65% before the government lockdowns, spiked to 74% during the lockdowns, and settled back to around 61%-62% after the lockdowns with 2021-2022 being an outlier (58%). The success rates were expected to decrease after the implementation of AB705 in 2019, due to students being able to enroll in transfer level math classes without satisfying any prerequisite requirements. Given this drastic change in population enrolling in Math 247, the success rates remain surprisingly stable after 2020 versus before 2019. In fact, 2021-2022 was the only school year where Statistics had a lower success rate than the math division. Government lockdowns mucked up the data for 2019-2020. Statistics success rates are lower post-pandemic than they were pre-pandemic. There are more underprepared students due to AB705 and government lockdowns. There are more online Statistics classes, and many of these online students would be more successful in face-to-face courses.

Successful Course Completion Math 265A, 265B, 283, 287 (STEM Calculus)

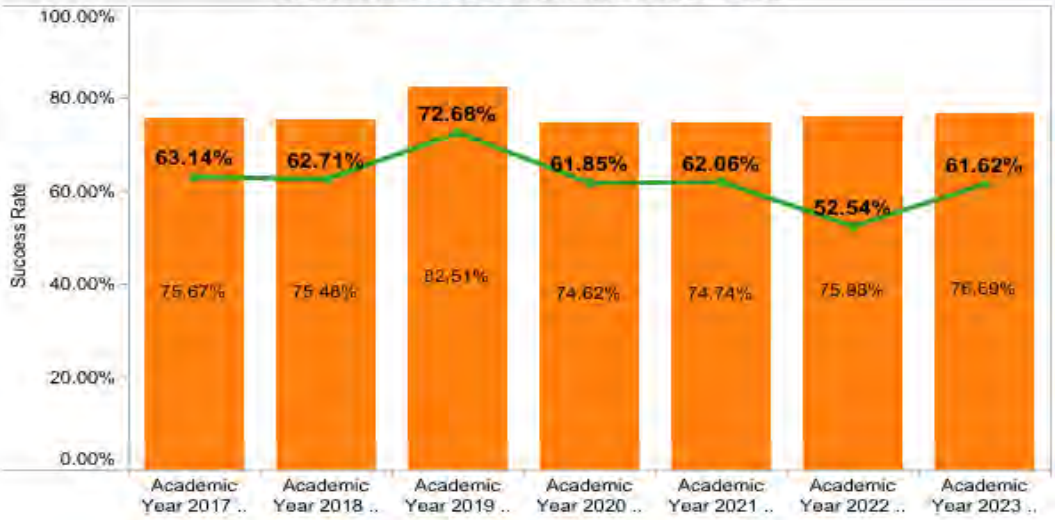
SLOCCCD Program Review Data: Successful Course Completion

Select Department: Mathematics

TERM All

COURSE Multiple values

Measure Names
- Department Success Rate
- Overall College Success Rate



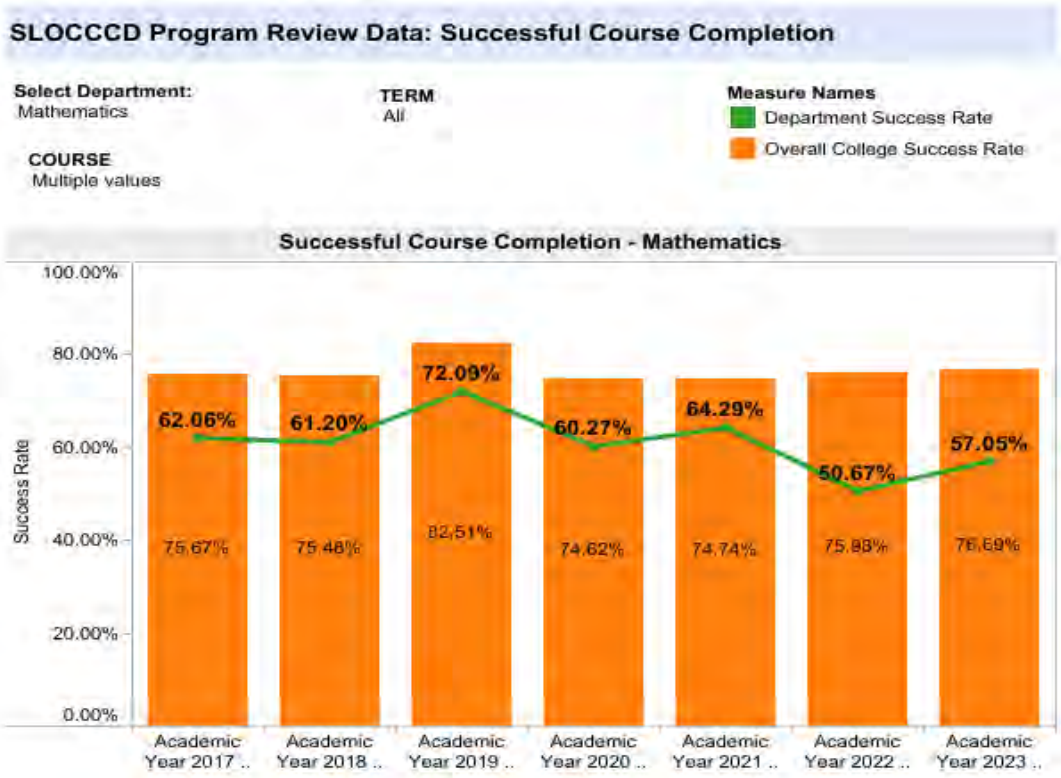
Mathematics Success Rate Table

	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022	Academic Year 2022 - 2023	Academic Year 2023 - 2024
Department Success..	63.14%	62.71%	72.68%	61.85%	62.06%	52.54%	61.62%
Total Enrollments	758	886	790	838	693	772	877

Success: The Percentage of student enrollments resulting in a final grade of "C" or better

The success rates in the STEM Calculus sequence have started to bounce after the dip in success rates the previous year, though they are still below the historical average success rate. This is likely due to the large drop in the success rate of Math 265A, which hopefully will increase with the implementation of a new corequisite course and a new optional prerequisite course.

Successful Course Completion Math 265A



Mathematics Success Rate Table

	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022	Academic Year 2022 - 2023	Academic Year 2023 - 2024
Department Success..	62.06%	61.20%	72.09%	60.27%	64.29%	50.67%	57.05%
Total Enrollments	507	635	557	595	563	598	650

Success: The Percentage of student enrollments resulting in a final grade of "C" or better

The success rate in Math 265A has increased from the previous year, when the success rate reached a historical low. With the implementation of AB1705, a drop in the success rates for MATH 265A comes as no surprise and lower success rates may be the new norm. However, the department is working to increase success rates in 265A by creating a new

corequisite course, starting in Fall 2025 and reactivating a blended Precalculus Algebra and Trigonometry course. Hopefully these changes will help increase the success rates in Calculus 1.

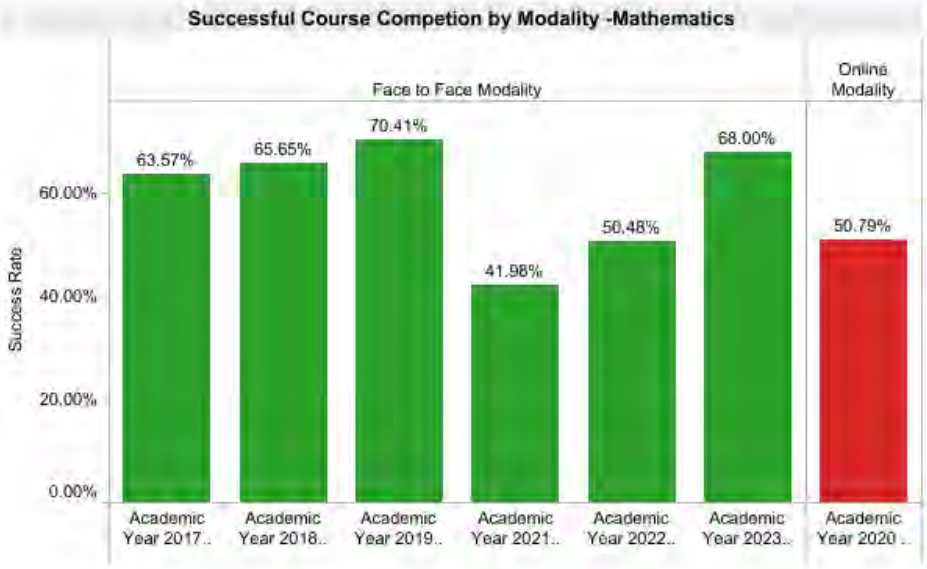
Successful Course Completion Math 283

SLOCCCD Program Review Data: Successful Course Completion

Select Department: Mathematics

Course: MATH283

Legend: Face to Face Modality, Online Modality



Successful Course Competion by Modality Table - Mathematics

		Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022	Academic Year 2022 - 2023	Academic Year 2023 - 2024
Face to Face Modality	Department S..	61.01%	60.91%	70.93%	71.95%	59.90%	59.95%	64.02%
	Total Depart..	5,372	5,096	4,701	476	2,000	2,127	2,480
Online Modality	Department S..	47.90%	46.00%	63.09%	59.75%	63.64%	60.26%	60.04%
	Total Depart..	357	401	606	4,352	2,298	2,088	1,929

Given the disaggregated data for success rates based on modality in the previous section, the decline in STEM Calculus success rates in 2022-2023 was primarily due to the requirement that online Calculus courses started to require in-person exams. This resulted in a decline in success rates for Math 265A and Math 265B from 68% to 40% in one year, which is why we see the overall STEM calculus success rate decline from 62% to 53%. It should be noted that after we moved to in-person exams, the success rate in Math 283 jumped from 50% to 68% suggesting that the students who successfully completed Math 265A and Math 265B in person, or online with in-person exams, were genuinely prepared for Calculus III. This provides a strong argument for why it is best, in sequential

course sequences, such as Calculus, to maintain academic integrity so students' grades reflect their preparedness for the next course in the sequence. Then, if students are underprepared, they can get the support they need to become sufficiently prepared before they move forward in the sequence.

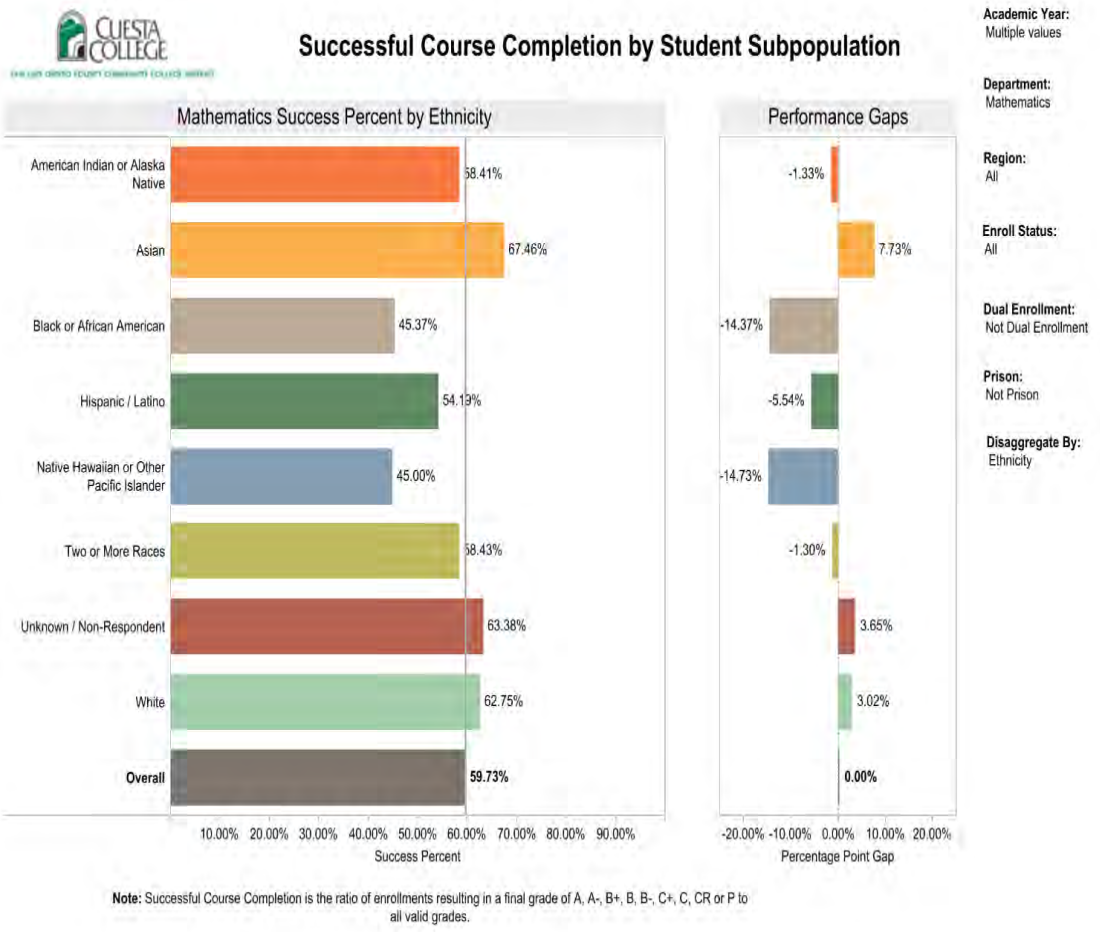
G. Review the **Disaggregated Student Success** charts; include any charts that you will reference. Describe any departmental or pedagogical outcomes that have occurred as a result of programmatic discussion regarding the data presented.

The following are some questions you might want to consider:

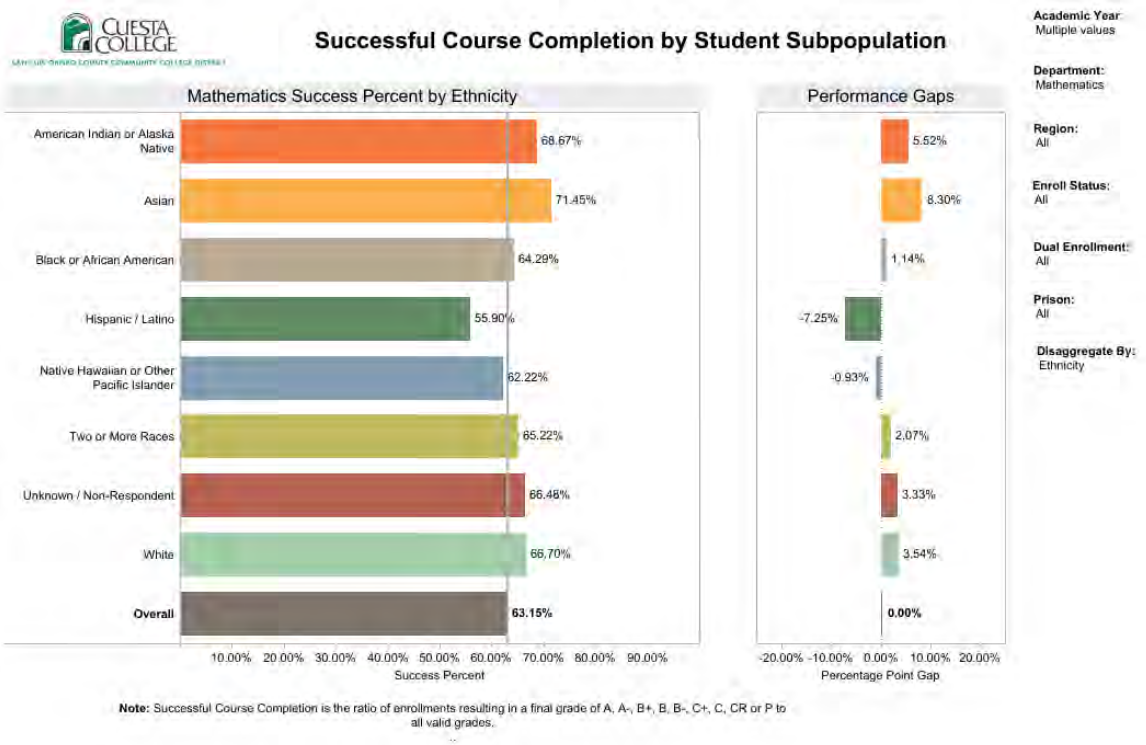
- What specific groups are experiencing inequities? What patterns do you notice in the data? How have the equity gaps changed since the previous academic year?
- What professional opportunities are your program faculty participating in to address closing equity gaps?
- What strategies, policies and/or practices in your program have you implemented or what could be improved to better support students who experience equity gaps?

Click here to enter text.

Successful Course Completion Before Full AB705 Implementation (2016-2017, 2017-2018, 2018-2019)



Successful Course Completion After Full AB705 Implementation and Partial Implementation of AB 1705 (2019-2020, 2020-2021, 2021-2022, 2022-2023, 2023-2024)



In an effort to perform a deeper analysis of the current course success equity gaps, the division has desegrated the course success data by group type and student enroll status. The possible significant results are summarized in the table below:

	Continuing Student	First-time	First-time transfer	returning student
Acad. Disadvantage	14%	29%	35%	NS
DSPS	NS	9%	NS	NS
Ethnicity	African American 8% Native Hawaiian 8%	African American 17% Latinx 10%	African American 15% Latinx 11%	African American 30%
First Gen	NS	14%	10%	NS
Foster Youth	NS	22%	10%	10%

1Math course equity gaps from 2019-2024. Data doesn't include CMC or Dual Enrollment students. "NS" represents "Not Significant".

The first major observation is the there is possible significant equity gap for "First-time" students for all the five student groups (Academically Disadvantage, DSPS, Ethnicity, First Gen and Foster Youth) that had at least one significant equity gap for one of the "Enroll Status" groups. This is can be evidence that the San Luis Obispo campus may benefit from establishing a first-time student support program similar to the "Me 1st" program that is currently being piloted in the North County campus.

The second major observation is that our African American students have a possible significant equity gap for each student enrollment status. With African American returning students having the largest equity gap of 30%. The intersectionality between our Latinx students and first-time students further illustrates the need for the development of support structures for our first-time students.

The division will continue to collaborate with both the MESA and LSAMP program to support our first-generation students and underserved ethnicities in STEM. Although both of these programs are focused on STEM majors, there might an opportunity to provide peer mentoring/tutoring opportunities between MESA/LSAMP students and non-STEM majors taking a math course. The SACNAS club in addition to following its mission to diversify STEM by supporting all STEM majors, is also committed to support all students taking STEM courses and is ready to provide free one-on-one tutoring.

The final major observation is that all of our foster youth students except for continuing foster youth students are in need of targeted academic support in math courses. The division will explore avenues on how to collaborate with the NextUP foster youth program on campus to create opportunities for both academic and mentoring support.

PROGRAMS AND CURRICULUM REVIEW PROGRESS

SECTION 1: PROGRESS CHECK ON SCHEDULED CURRICULUM UPDATES FROM CPPR

Directions:

For the following questions, please refer to #3 in Section 1 of the Programs and Curriculum Review Progress portion of last year's APPW.

1. List those programs of study (degrees and/or certificates) and courses that were scheduled for major or minor modification during the 2024 academic year in the 5-year calendar of the Curriculum Review Worksheet.

   NO PROGRAMS OF STUDY (DEGREES OR CERTIFICATES) WERE SCHEDULED FOR MAJOR OR MINOR MODIFICATIONS DURING THE 2024 ACADEMIC YEAR.

2. From the list generated in #1, identify those programs of study and courses that underwent the scheduled modifications during the 2024 academic year. Complete the table below for those items only.

Program of Study **OR** Prefix and Course #	Major/Minor Modification (select one)	Date completed (semester and year)

3. From the list generated in #1, identify those programs of study and courses that did **not** undergo the modifications for which they were scheduled during the 2024 academic year. Complete the table below for those items only.

Program of Study OR Prefix and Course #	Past Due Date for Modification	Briefly state why modification was not completed on schedule	Re-scheduled date for modification (must be within 1 year)

SECTION 2: PROGRESS CHECK ON PREVIOUSLY OUT-OF-DATE CURRICULUM UPDATES FROM CPPR

Directions: For the following questions, please refer to #3 in Section 1 of the Programs and Curriculum Review Progress portion of APPW from years before the previous academic year where incomplete curriculum updates were re-scheduled to be

addressed in 2024.

1. List those programs of study and courses that are listed in the older APPW that were listed in #3. Complete the table below for those items only. If there were no courses included under #3 of previous APPW, please type "N/A" in the first box of the first row of the table.

Program of Study OR Prefix and Course #	Past Due Date for Modification	Re-scheduled date for modification	Completed (yes or no)

2. From the list generated in #1, identify those programs of study and courses that did **not** undergo the modifications for which they were re-scheduled to during the 2024 academic year. Complete the table below for those items only. You may leave this table blank if you wrote "N/A" for the previous table.

Program of Study OR Prefix and Course #	Past Re-scheduled Due Date for Modification	Briefly state why modification was not completed as rescheduled	Second re-scheduled date for modification (must be within 6 months)

Other Relevant Program Data (optional)

Provide and comment on any other data that is relevant to your program such as state or national certification/licensure exam results, employment data, etc. If necessary, describe origin and/or data collection methods used.

PROGRAM OUTCOMES ASSESSMENT CHECKLIST AND NARRATIVE

CHECKLIST

☒ SLO assessment cycle calendar is up to date.

☒ All courses scheduled for assessment have been assessed in eLumen.

☐ Program Sustainability Plan progress report completed (if applicable).

NARRATIVE

Briefly describe program changes, if any, which have been implemented in the previous year as a direct result of the Program or Student Services Learning Outcomes Assessment. *If no program changes have been made as results of Program or Student Services Learning Outcomes Assessment, indicate: NONE.*

None: **Because our current SLO analysis does not disaggregate results based on student group type or enrollment status, the Math Division is more focused on using disaggregated data to close equity gaps as opposed to Student Learning Outcome Analysis. That said, results of SLO analysis are used to discuss topic focus and sequencing, for example, to improve learning outcomes.**

PROGRAM PLANNING / FORECASTING FOR THE NEXT ACADEMIC YEAR

Briefly describe any program plans for the upcoming academic year. These may include but are not limited to the following: *(Note: you do not need to respond to each of the items below)*. *If there are no forecasted plans for the program, for the upcoming year, indicate: NONE.*

A. New or modified plans for achieving program-learning outcomes and addressing equity gaps

- **Increase coordination with the Student Success Center.**
- **Increase utilization of embedded tutors.**
- **Enhanced professional development:**
  - **Motivate Lab**
  - **Grading for equity**
  - **JEDI Training and other equity-based training**
- **MESA coordination and support.**
- **LSAMP/SACNAS Leadership.**
- **Fall STEM Mixer**
- **Promise Day**
- **Educate**

B. Anticipated changes in curriculum, scheduling or delivery modality

- **Develop and offer Math 165S – Calculus I concurrent support course to support the implementation of AB 1705 provisions for STEM students.**
- **Offer Math 248 – Data Science. One faculty member earned a Data Science certificate, and another faculty member is working on a sabbatical for Data Science. The Math and Computer Science Division will be working to offer a certificate and/or ADT in Data Science.**

- **Continue to implement common course numbering. The first course numbering change, with the corresponding change to the COR in order to allign with the state requirements, will occur in Fall 2025 when Math 247 is changed to STAT C1000.**
- **All pre-transfer level math courses have now been outlawed and subsequently removed from the schedule.**
- **Fast tracked development of Math 263 – Precalculus with Trigonometry, which will be offered in Fall 2025.**
- **Additional Me First courses offered at both NC and SLO campuses.**
- **Pilot cohorts of two 8-week Math 247 courses that align with corresponding English 1A courses.**
- **Decrease the number of online Math 265A/265B courses due to extremely low success rates in those courses.**
- **Additional review and integration of Computer Science courses to the Math and Computer Science Division.**

C. Levels, delivery or types of services

- **Course packs were provided free of charge to students utilizing Lottery Funds.**
- **Free ALEKS codes.**
- **Free StatCrunch codes for disadvantaged students.**

D. Facilities changes

- **SLO room 4114 was upgraded to the campus AV standard.**
- **N2803 upgraded with campus AV standard and Chromebook charge cart added.**
- **Primary printer in SLO replaced with new printer.**

E. Staffing projections

- **One full-time math faculty retirement after the Spring 2025 semester. The Math Division will likely pursue a full-time faculty position in Fall 2025.**
- **One new part-time CS faculty member is leaving for a full-time position.**
- **Our exceptional and funny Dean is leaving the position.**

F. Other

- **The biggest challenges the division will likely face in the next academic year will be the further implementation of AB 1705 combined with the integration of the Computer Science Department into the Mathematics and Computer Science Division.**

Program Sustainability Plan Progress Report

This section only needs to be completed if a program has an existing Program Sustainability Plan. Indicate whether objectives established in your Program Sustainability Plan have been addressed or not, and if improvement targets have been met.

Area of Decline or Challenge	Identified Objective (Paste from PSP)	Planning Steps (Check all that apply)	Has the Improvement Target Been Met?
Enrollment		☐ Identified ☐ Resources Allocated ☐ Implemented	**Select one**
Student Demand (Fill Rate)		☐ Identified ☐ Resources Allocated ☐ Implemented	**Select one**
Efficiency (FTES/FTEF)		☐ Identified ☐ Resources Allocated ☐ Implemented	**Select one**
Student Success – Course Completion		☐ Identified ☐ Resources Allocated ☐ Implemented	**Select one**
Student Success — Course Modality		☐ Identified ☐ Resources Allocated ☐ Implemented	**Select one**
Degrees and Certificates Awarded		☐ Identified ☐ Resources Allocated ☐ Implemented	**Select one**

If Program Sustainability Plan is still necessary, provide a brief description of how you plan to continue your PSP and update your PSP to remove any objectives that have been addressed and include any new objectives that are needed.