2019 INSTRUCTIONAL ANNUAL PROGRAM PLANNING WORKSHEET

CURRENT YEAR: 2018 - 2019 **PROGRAM: MATHEMATICS**
CLUSTER: MATH AND SCIENCES **LAST YEAR CPPR COMPLETED: 2017**
NEXT SCHEDULED CPPR: 2021 **CURRENT DATE: 2/5/2019**

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
- 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 degrees and/or certificates:
A.S. Mathematics and A.S.T. Mathematics

GENERAL PROGRAM UPDATE

Describe significant changes, if any, to program mission, purpose or direction. *If there are not any, indicate: NONE.*

AB705 requires community colleges to maximize the probability that a student will complete transfer level English and transfer level Mathematics during the first year starting Fall 2019. The Chancellor's office directed schools to discontinue all placement exams and institute guided placement methods that provide more open access to first tier transfer level math courses. Since the directive from the Chancellor's office has fairly stringent requirements of providing data to justify any mandated pre-transfer placement, Cuesta College started allowing all students to have access to first tier transfer level courses Spring 2019, if desired. For the Fall 2019 cohort, the Math Division has collaborated with Counseling and Placement to create guided self placement messaging through Comevo that considers the students' academic background and their area of focus in order to help the student make an educated decision about both the type of course and whether they want to choose to take a preparatory course. This guided placement will improve in quality with the implementation of Guided Pathways. The Math Division has been working hard in the short timeline to make shifts in offerings, work on enhancing student support, and collaborating across campus to ensure the best possible transition.

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.

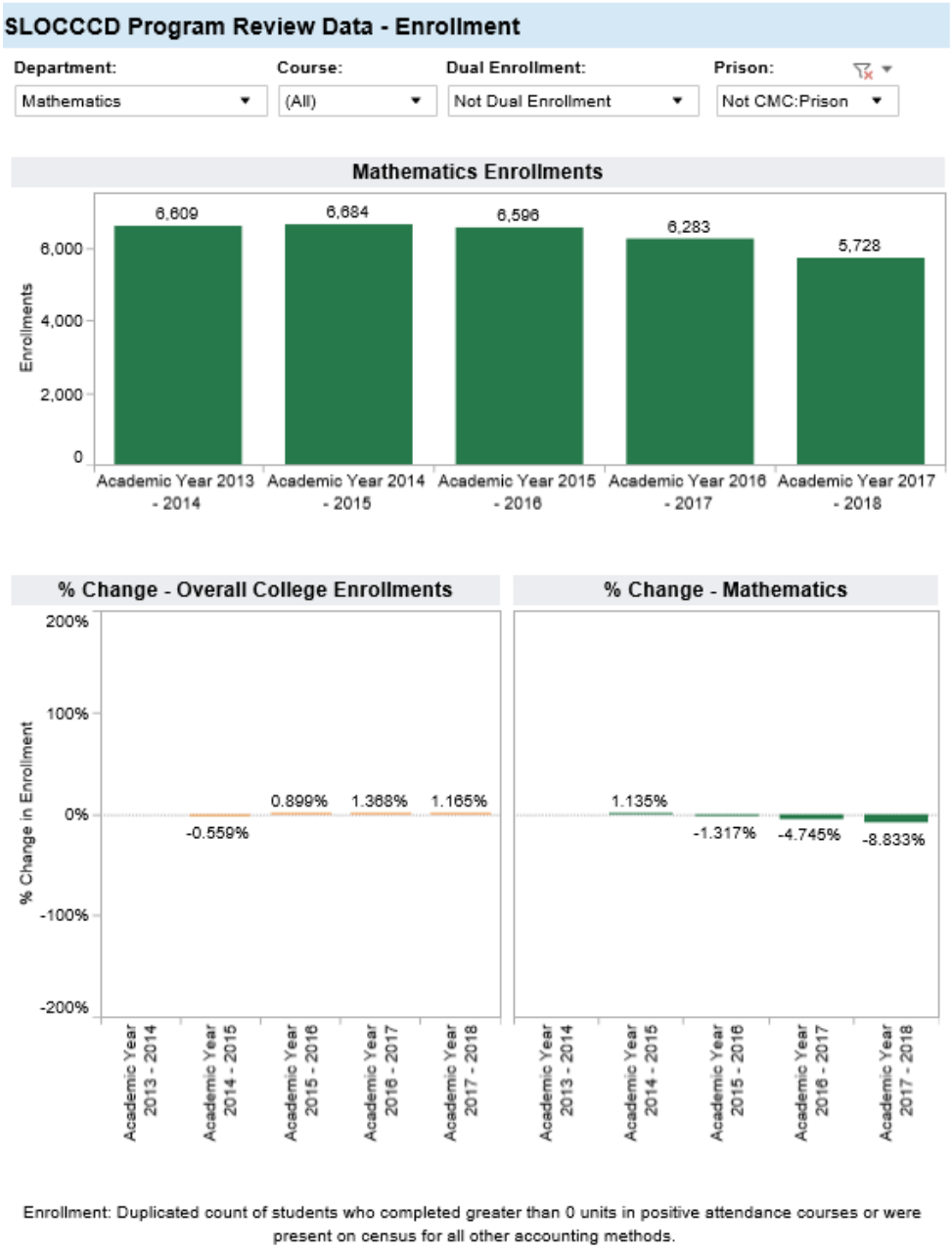
DATA ANALYSIS AND PROGRAM-SPECIFIC MEASUREMENTS

2019 INSTRUCTIONAL ANNUAL PROGRAM PLANNING WORKSHEET

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.

General Enrollment (Insert Aggregated Data Chart)

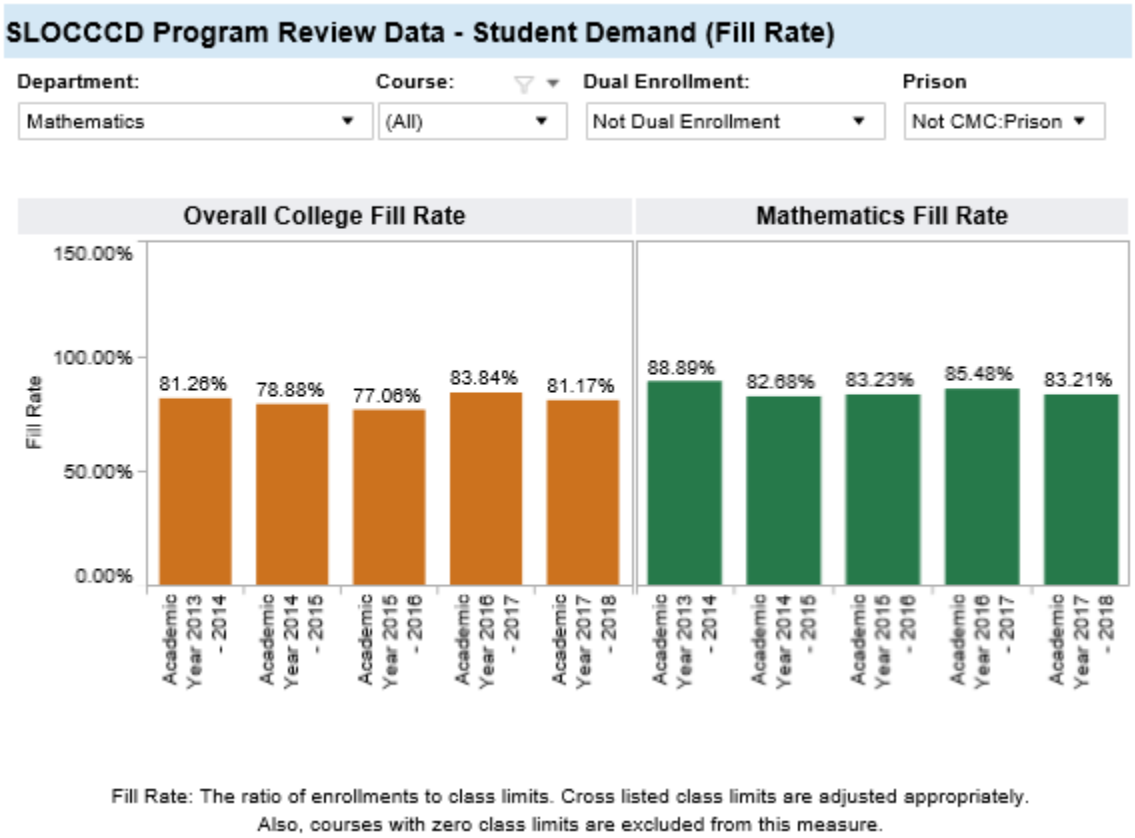
Insert the data chart and explain observed differences between the program and the college.



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.

General Student Demand (Fill Rate) (Insert Aggregated Data Chart)

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

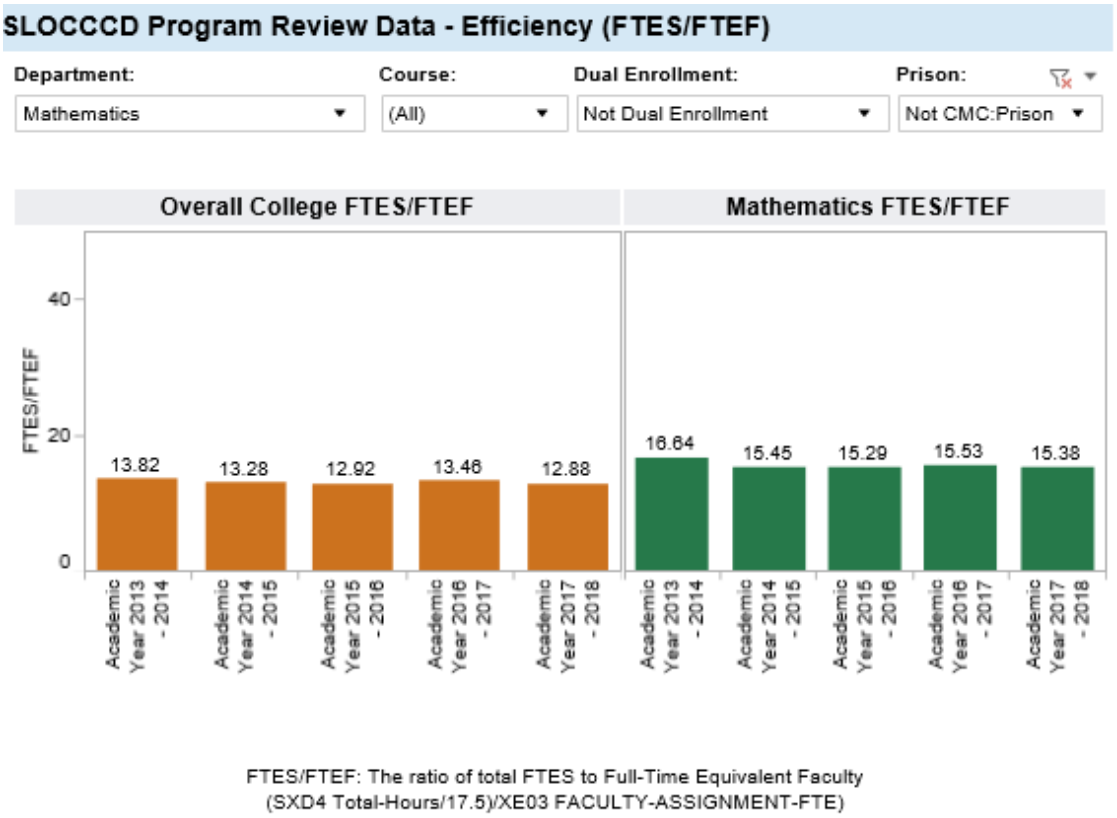


Fill Rate: The ratio of enrollments to class limits. Cross listed class limits are adjusted appropriately. Also, courses with zero class limits are excluded from this measure.

The fill rates for the Mathematics Division continue to be higher than that of the College. This is particularly noteworthy since class caps for all of our calculus classes moved to 40 from 35 during 2017-2018 year and classes that were previously offered in smaller classrooms that had artificially lower caps were moved into classrooms with cap 40. The strong fill rates are due to the careful monitoring of the schedule, adjusting offerings every semester to meet shifting demands.

General Efficiency (FTES/FTEF) (Insert Aggregated Data Chart)

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



FTES/FTEF: The ratio of total FTES to Full-Time Equivalent Faculty
(SXD4 Total-Hours/17.5)/XE03 FACULTY-ASSIGNMENT-FTE)

The efficiency of Mathematics Division is much stronger than the College. Once again this is attributed to careful monitoring and adjusting the Mathematics Division schedule.

Student Success—Course Modality (Insert Data Chart)

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

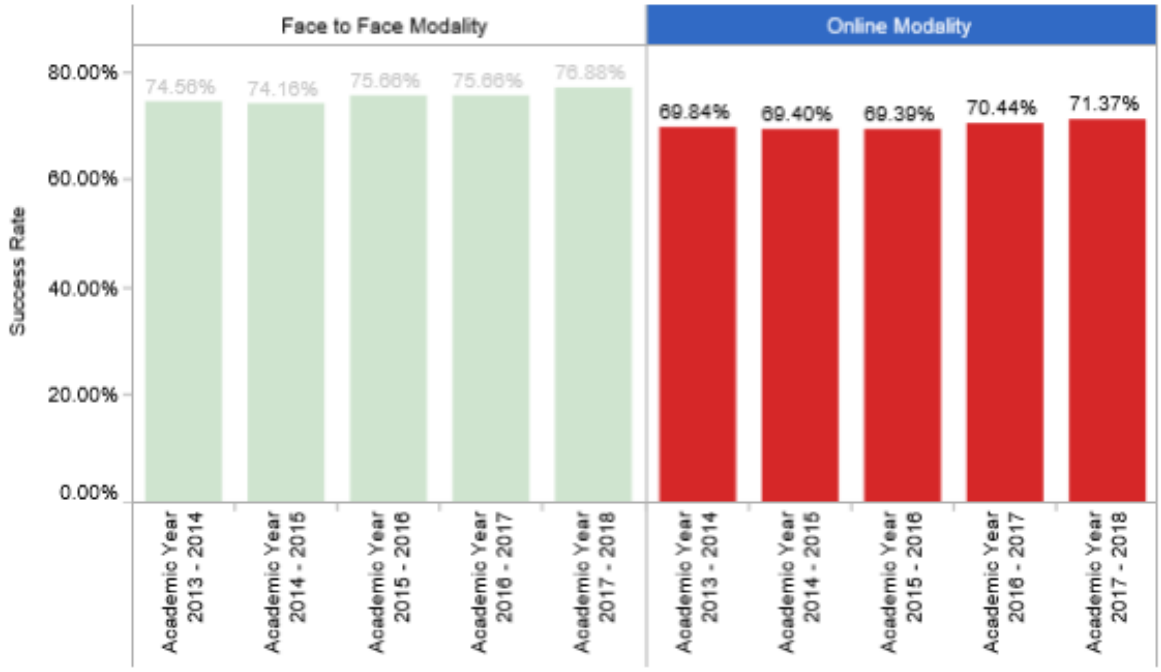
SLOCCCD Program Review Data: Successful Course Completion

Select Department: (All)

Course: (All)

Legend:
- Face to Face Modality
- Online Modality

Successful Course Competion by Modality -All



Successful Course Competion by Modality Table - All

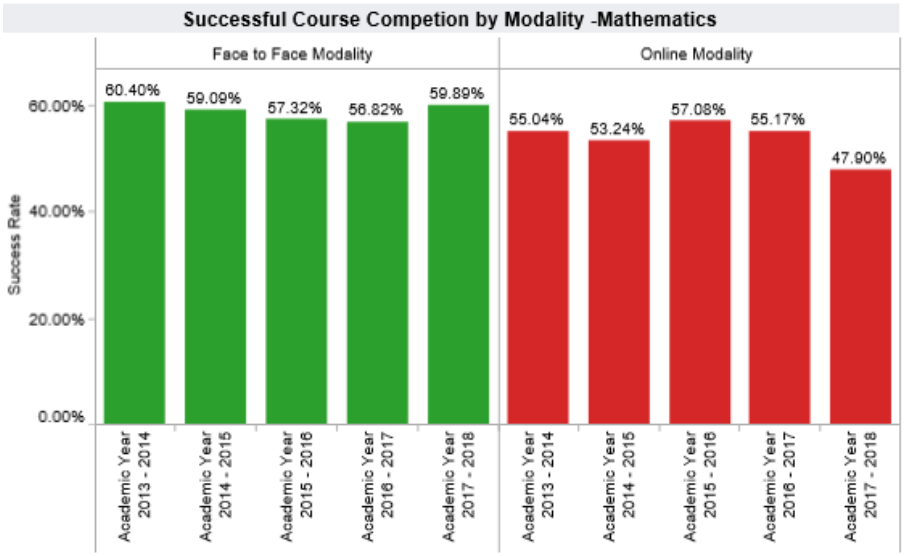
		Academic Year 2013 - 2014	Academic Year 2014 - 2015	Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018
Face to Face Modality	Department Success Rate	74.56%	74.16%	75.66%	75.66%	76.88%
	Total Department Enrollments	51,005	48,714	48,233	47,128	44,806
Online Modality	Department Success Rate	69.84%	69.40%	69.39%	70.44%	71.37%
	Total Department Enrollments	7,101	8,112	9,950	10,442	12,312

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 Table - Mathematics

		Academic Year 2013 - 2014	Academic Year 2014 - 2015	Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018
Face to Face Modality	Department Success Rate	62.67%	60.74%	61.20%	60.04%	60.99%
	Total Department Enrollments	6,384	6,475	6,377	6,024	5,371
Online Modality	Department Success Rate	55.04%	53.24%	57.08%	55.17%	47.90%
	Total Department Enrollments	238	216	219	261	357

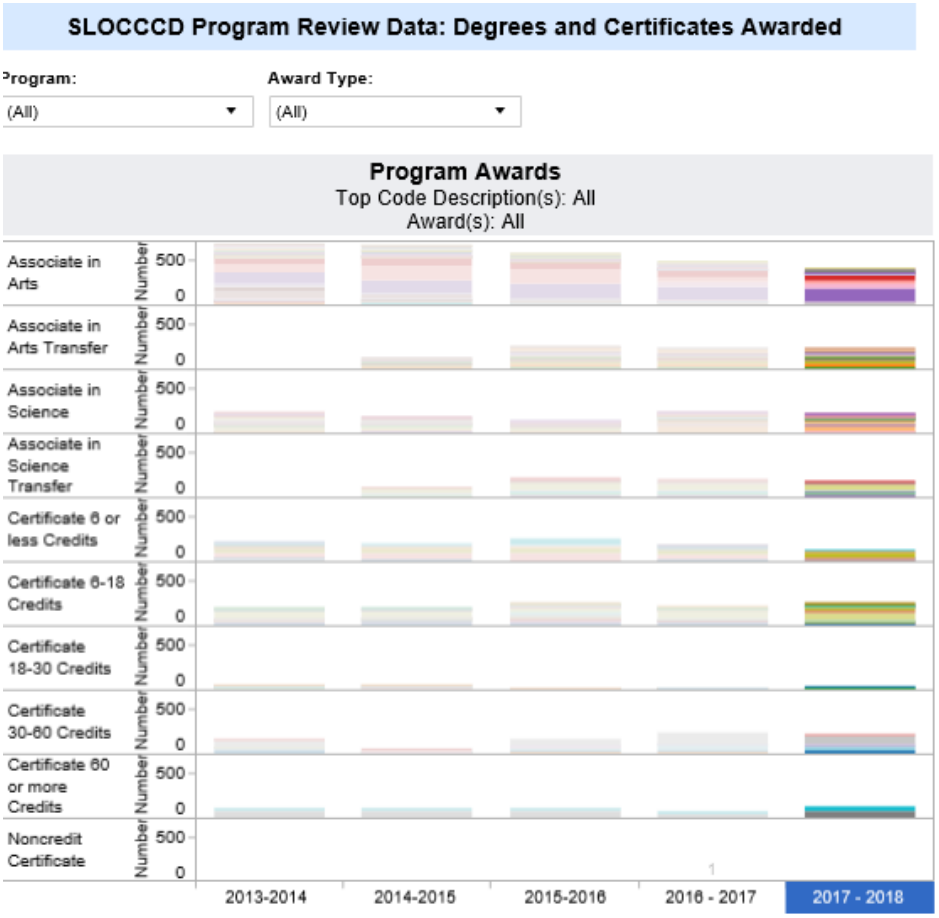
The data above includes the success rate for Math 123, 127, 232 and 247 in both modalities. Similar to the College, the DE courses in mathematics have a lower success rate than face to face classes. Success rates in DE modality have a median 55.17% with a range of 9.18%.Success rates in 2017-18 decreased overall for DE from previous years. Much of this decrease was likely due to the addition of Math 247 in the DE modality. It might be expected that success rates in DE decrease as new instructors are trained in DE, and as more transfer level courses are offered in DE. In order to increase the success rate, DE faculty are

- ***Attempting more outreach to students who have stopped keeping up with the class.***
- ***Creating more interactive assignments for the students to engage with each other and the instructor more***
- ***Changing the Canvas course shell to be more inviting and easier to navigate for students.***
- ***Changing the format of discussion posts to have a wider group discussion among the entire class and the instructor.***

- ***Using Discussion Boards for student questions about the mathematics with the associated instructor feedback. With the change in online culture of students, using Discussion Boards to share student questions and instructor responses can build a sense of community in the online classroom, answer questions that others likely share, and allow the other students in the class to know that classmates also struggle with mathematics. Students can post their questions directly on the Discussion Board if they are comfortable with public discussion or they could e-mail questions to the instructor who then can post the question and answer anonymously.***

Degrees and Certificates Awarded (Insert Data Chart)

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



Program Awards Table

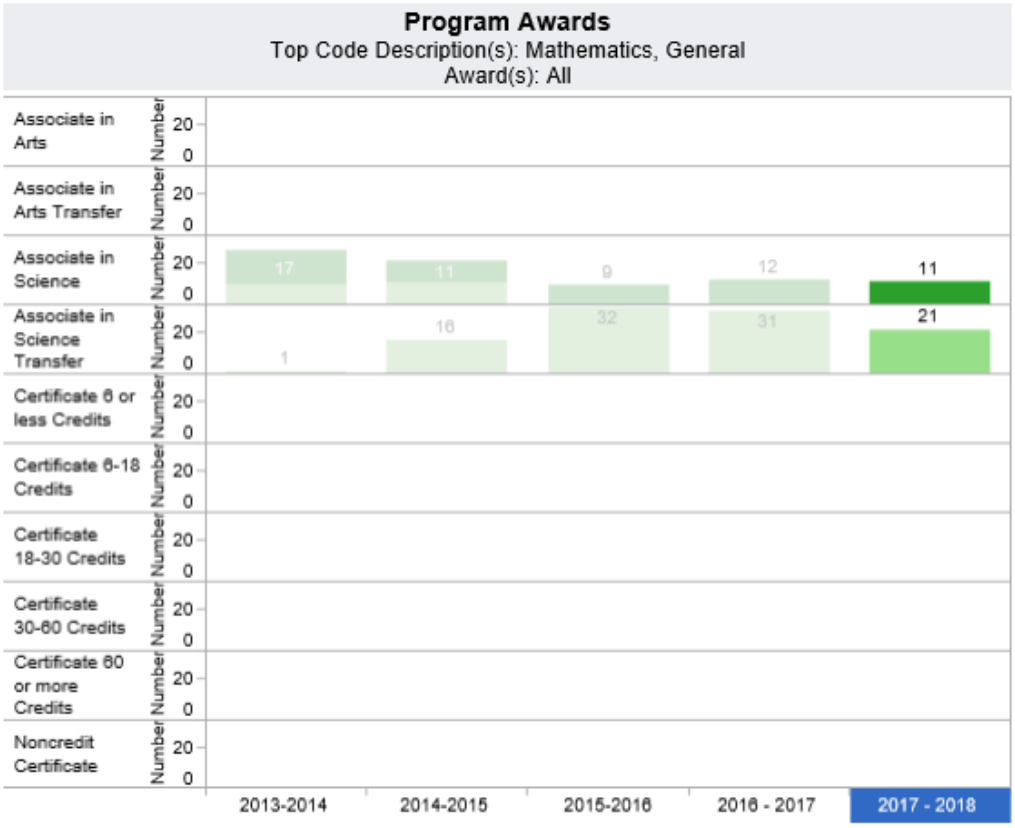
Award T..	Award	2013-2014	2014-2015	2015-2016	2016 - 2017	2017 - 2018
60 or more Credits	Psychiatric Technician (CA)	75	70	76	30	75
	Total	113	110	115	71	121
Noncredit Certificate	ESL Level 3 (NC)				1	
	Total				1	
Grand Total		1,633	1,692	1,967	1,846	1,775

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

SLOCCCD Program Review Data: Degrees and Certificates Awarded

Program: Mathematics, General

Award Type: (All)



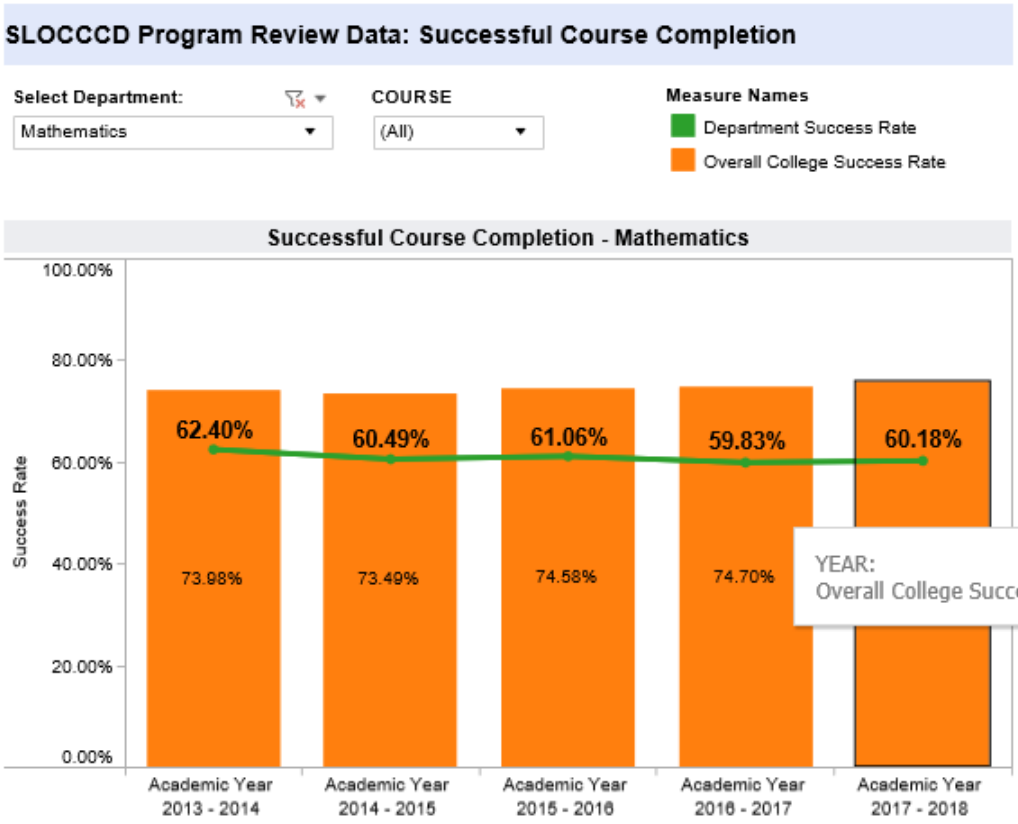
Program Awards Table

Award T..	Award	2013-2014	2014-2015	2015-2016	2016 - 2017	2017 - 2018
in Science	Mathematics (AST)	9	10			
	Total	26	21	9	12	11
Associate in Scienc..	Mathematics (AST)	1	16	32	31	21
	Total	1	16	32	31	21
Grand Total		27	37	41	43	32

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

The Mathematics Division's main role on campus is supporting all of the degrees and certificates offered at the College. We continue to have a small group of students who earn AST or AS in mathematics. Dialog has begun if we should offer this cohort a Methods of Proofs course every other year so that these students are not behind when they transfer.

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



Mathematics Success Rate Table

	Academic Year 2013 - 2014	Academic Year 2014 - 2015	Academic Year 2015 - 2016	Academic Year 2016 - 2017	Academic Year 2017 - 2018
Department Success..	62.40%	60.49%	61.06%	59.83%	60.18%
Total Enrollments	6,622	6,691	6,596	6,285	5,728

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

The success rates for Mathematics have remained relatively steady over the last five years. Students represented in these five years of data were placed in their initial math class via our old Multiple Measures assessment which took into account assessment test results, courses completed in high school, grades in those courses, and time lapsed since last math class. For Fall 2018 the new MMAP matrix was used for placement and Spring 2019 transitioned to AB705 placement, allowing open access to all first tier transfer level math courses. The above data will serve as a baseline of pre-MMAP/AB705 placement success rates for subsequent years' analysis.

The following table represents a baseline of enrollments and success rates in the five years preceding the shift to MMAP and AB705 placements. The median and range of the enrollments and the median and range of the success rates from 2013-2014 through the 2017-2018 academic years are provided for each course. If a course went through a major change, the baseline data was created from that year on.

PRE-MMAP/AB705 COURSE DATA:

Course	Median Enrollment	Range of Enrollment	Median Success Rate	Range of Success Rates	Notes related to data
Math 003 Arithmetic	191	79 (142-221)	60.21%	4.44%	Math 003 success rate was at the highest in 13/14 at 63.59% and has been on a mostly steady decline with 59.15% in 17/18.
Math 007 Pre-Algebra	389	121	58.61%	5.26%	There is a net change in enrollment from 16/17 year to 17/18 year of -61 students (2 full sections)
Math 123 Elementary Algebra	635	556	51.89%	1.84%	There has been a steady decline in student enrollment from 778 in 13/14 to 222 in 17/18, but the success rate has remained relatively consistent
Math 127 Intermediate Algebra	1038	478	55.71%	7.38%	Both enrollment and success rates have been declining over the past five years. With most of the decrease in enrollment occurring in 17/18
Math 128 Applied Algebra	277.5	33	65.33%	0.72%	M128 was modified significantly in Fall, 2016. Therefore, only the 2016-17 and 2017-18 years were used for these data.
Math 229 Trigonometry	221 (Avg = 210.6)	48 (181-229)	62.90% (Avg = 62.14)	11.59% 54.64-66.23%	There was an uncharacteristic dip in the success rate in 2015-2016. If we disregard this year, then the median is 63.77% and the range is only 3.95%.
Math 230 College Math for the Humanities	146	39 (130-169)	87.02%	8.4% (81.54%-89.94%)	There is increasing enrollment from 2016 to 2018.
Math 231 Trig w/Geometric Foundations	80	10 (74 – 84)	61.11%	8.16% (58.11%-66.27%)	Only one section is offered each semester. Enrollment has been steady at close to 40 per semester, but this will drop after AB705 and the geometry prerequisite is not enforced for Math 229.
Math 232 College Algebra	333	259	65.19%	11.13%	Enrollment in Math 232 has declined yearly from a high of 471 in 2013-14 to a low of 212 in 2017-18. This trend may stabilize with the addition of Math 232 as an option for the Math 255 prerequisite.

Math 242 Pre-Calculus Algebra	647	100 (584 – 684)	53.25%	6.75% (51.93-58.69%)	Enrollments in Math 242 have decreased significantly (about 15%) over this five year period. Success rates have been relatively stable; interestingly, the year with the highest enrollment also had the highest retention and success rate (2014-15). We should look at which faculty were teaching the course that year to see whether there is some approach one or a few are employing that others could use to increase success. Relationship between success and retention: The retention rates (median 74.4%, range 72.33% to 80.15%) are considerably higher than the success rates indicating that many students are persisting but not achieving a passing grade
Math 247 Intro to *Statistics*	1065 (including Math 236 enrollment)	232	64.65% (Not including Math 236)	5.94%	Math 236 no longer offered as of Spring 2017, so all students went into Math 247 for Intro to Statistics. Overall, statistics enrollment has increased year over year. With discontinuing Math 236, the passing of AB705, and the new offering of Math 247 in DE modality, we expect the success rates to decrease over the past couple of years and into the future.
Math 255 Calculus for Business & Management	152	40 (164-124) Lowest in 17/18	71.53%	17.12%	Math 255 had the highest rate in 13/14 at 77.63% followed in 14/15 by the lowest rate of 60.51%. It jumped back up to around72% then declined again to 64.52%. With AB705 I would expect the success rate to be near 65% or lower for the next few years.
Math 265A Analytic Geometry & Calculus	306	283 – 315	58.6%	56.2% - 63.2%	Success rates in Math 265B have risen over the five year period, the most recent three years being the highest of the last five
Math 265B Analytic Geometry & Calculus	221	31 (236—205)	65.11%	67.8%–56.4%	Success rate have been consistent for the last three years (average of 66.7%) though enrollment dropped from 236 in 2014/15 to 208 in 2016/17 and 205 in 2017/18.
Math 283 Multi-Variable Calculus	140	42	63.57%	6.57%	Success rates have been fairly consisted with a slight improvement over 5 years. Enrollment has varied from a low of 137 to a high of 163.
Math 287 Linear Analysis	128	26 (111-137)	67.57%	15.35% (61.26%-76.64%)	Success rates have a significant range from the lowest being in 2013-2014 and the highest being in 2016-2017.

NEW COURSE FOR FALL 2019:

Math 147S:

Math 147S was created by the department to address the demands of AB 705. Starting of Fall of 2019, the students will no longer be required to take pre-requisite courses to Math 247. The department anticipates that there will be many students who will not be adequately prepared for Math 247 in both cognitive and non-cognitive areas. In Math 147S, student will be able to refresh math skills needed to succeed in Math 247 and built soft skills related to time management, motivation, and grit. Students will be strongly recommended that they register for Math 147S as a pair with their Math 247 course. The department hopes that this pairing will help build a community of students that can support each other and grow from the shared experience.

The decision to create Math 147S was based on hours of research and meetings among different faculty in the department. The researched focused around colleges that already have support courses like Cuyamaca College along with research studies from the RP group. The department determined the structure and content of the course based on models from Merced College, Cuyamaca College, and Los Medanos College.

FURTHER NOTES ABOUT OUR CURRENT COURSES:

Math 007:

This course moved to a new text for the 18/19 School year. The motivation for the move was to offer an OER textbook to keep costs down for the students. Unfortunately, the textbook has not proven to be the best resource for instruction. We are considering the fact most students here (in Math 007) will continue onto Math 128 (applied algebra) and/or Math 230 (Math for Humanities) when considering course emphasis and required resources. From retreat, it was decided that there will be a search for a new text or collaboration to find more robust support text.

Math 128:

The implementation of AB 705 will affect both enrollment and demographics in Math 128. The course will have students who need it for their major (e.g., nursing) and those who elect to take it as preparation for a statistics course. A vast majority of Math 128 students continue to Statistics, while some do take College Algebra. The math division is discussing how to give students optimal preparation for statistics, while still providing adequate algebra for those who need it in subsequent semesters.

Mediated Learning:

Enrollments have been steady in these sections. It is an efficient way to offer our algebra courses since students can enroll in either Math 123 or Math 127 and have more times to fit their schedules. Due to AB705 some students will enroll in a higher course that they are not prepared for. The independent nature of Mediated Learning will provide them with an option

to transfer into Math 123 or 127, instead of having to withdraw and wait until the next semester to take another class.

Math 229

Starting with Fall 2018, some sections of Math 229 were taught using free OER materials. The motivation was to reduce textbook costs for students. The OER textbook covered trigonometry in just four chapters, so it was necessary to supplement some content. Students seemed to perform better with solving equations, but were weaker with the material on vectors.

Math 230

The implementation of AB 705 will increase the enrollment and decrease the success rate in Math 230. There will be more students in that class that do not meet the Math 127 or Math 128 prerequisites; therefore, success in the class will decrease, especially with some students enrolling into the class with barely any algebra skills.

Math 232

Just In Time resources are being developed for students who are out of practice in their algebra fundamentals. The textbook is changing in response to financial pressures of the current text. The textbook will change for Fall 2019 to provide a more reasonably priced option to students. There are also online resources with the new text. For AB705 Just In Time resources are being developed for students who are out of practice in their algebra fundamentals. These are being complied on a Canvas page where students and other teachers can self-enroll or access the resources. Identified skills will have a worksheet, video, and quiz to review. New instructors will also be directed to the page helping identify prerequisite skills.

Math 242

We have continued to use a free (online) textbook. There has been some discussion about moving to a different textbook to see whether that impacts the low success rates. The students generally are not completely happy with the current text which is quite rigorous and not very readable. The general opinion among instructors teaching Math 242 is that the course covers more material than is really necessary to prepare students for calculus. We have discussed the possibility of removing some of the material from this course but have hesitated to pursue this due to possible articulation issues.

We have discussed whether this course is appropriate to have as a prerequisite for Math 255, Business Calculus. The extensive and rigorous content of this course seems excessive for students not going on to the STEM calculus courses. Based on this, we are making Math 232 the new prerequisite for Business Calculus. We have also discussed replacing this course with a full precalculus with trigonometry course for the STEM majors. We haven't pursued this yet due to, again, concerns about articulation and also uncertainty about whether it's optimal for students to take a such a unit heavy course since a full precalculus course would likely have to be 6 units.

For AB705 We have instructors working on "Just In Time" review to be embedded in the course. One instructor tried piloting this approach in Fall, 2018. She did not notice any changes in student success so this is continuing as a work-in-progress. We also had one of our professional (not student) tutors pilot a weekly Math 242 Focused Study Group during Fall, 2018. The sessions were not well attended so it wasn't considered a good use of this tutor's time. Generally, we need to put more energy into finding ways to increase student success in this course.

Math 287

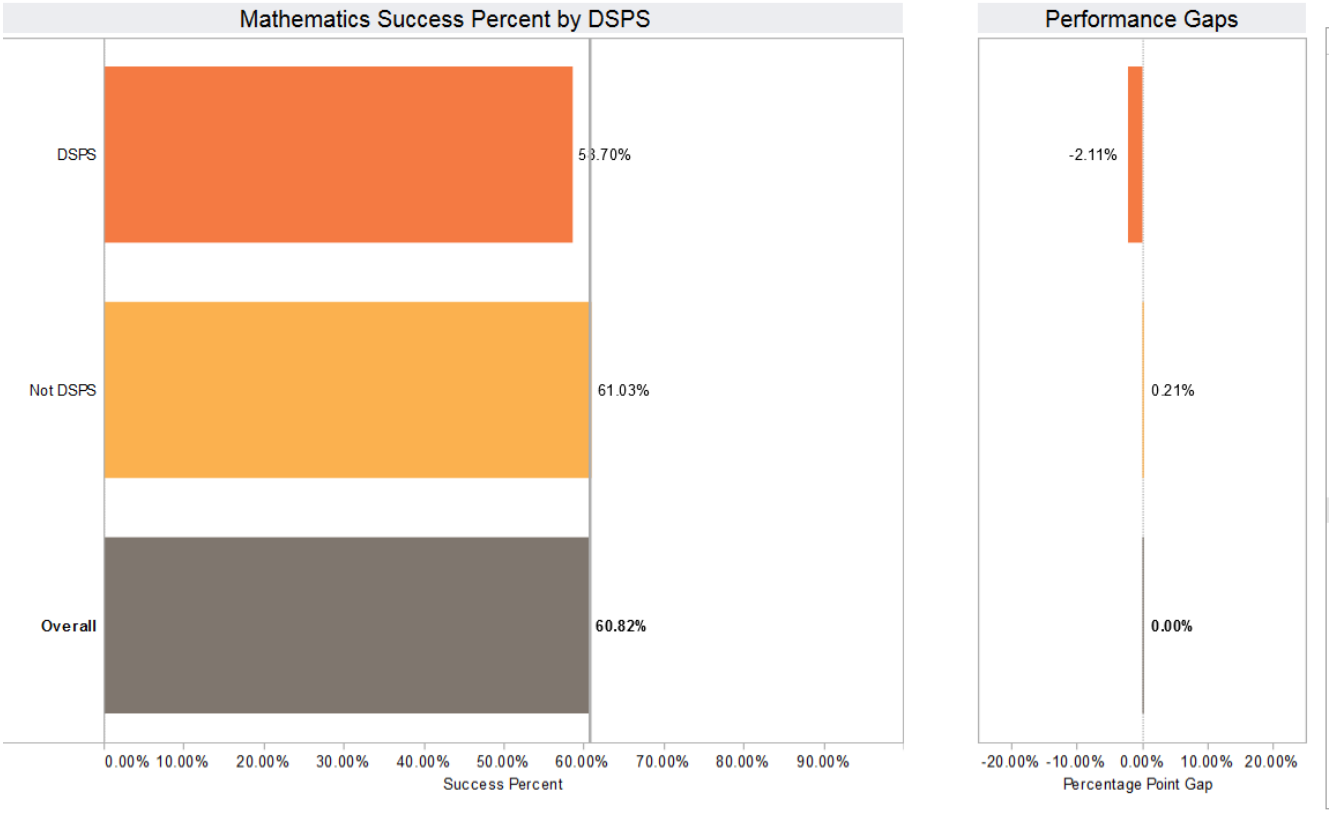
In Fall 2016 we had to change the course outline for Math 287 due to the C-IDs. Some topics were taken away, but a lot more topics were added to the outline. The 2016-2017 academic year saw the highest success rate of 76.64% before dropping down to 67.57% the next academic year. This is most likely due to variation of the students. The implementation of AB 705 will not have much of an effect on this class.

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 good news: We saw no substantial gaps (gap < 5%) in success for the following groups:

Age: (Note: age 35 – 39 have the highest success rate; under 20 the lowest);

DSPS: This is super good news!



Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.

Gender: No substantial gaps though women have about a 4% lead on men, confirming informal suspicions that women do a bit better overall.

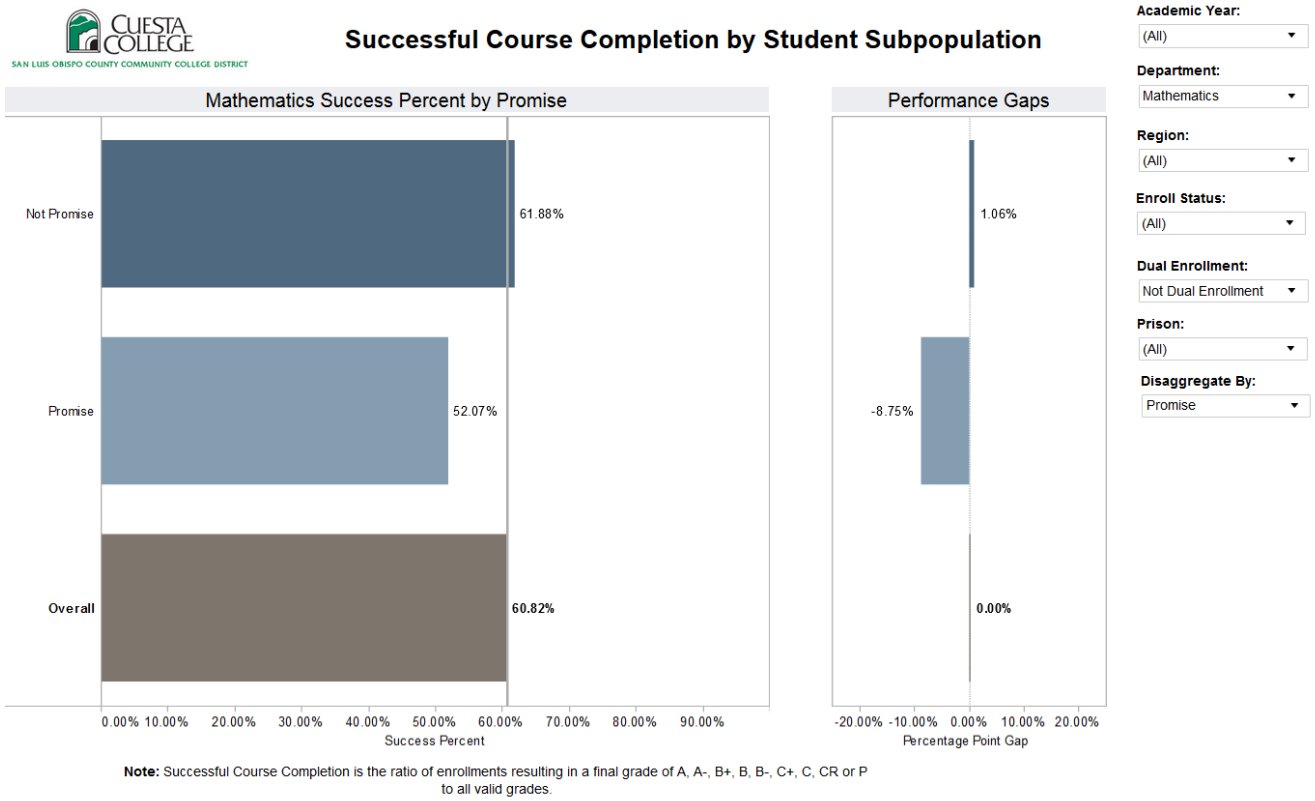
Veterans: This group has a positive gap; i.e., they're doing better than everyone else in Math, so, yay!

Note: Both DSPS students and Veterans have substantial support and resources at Cuesta College. Veterans also tend to be older, focused students.

A bit concerning: There were slightly larger gaps in these groups.

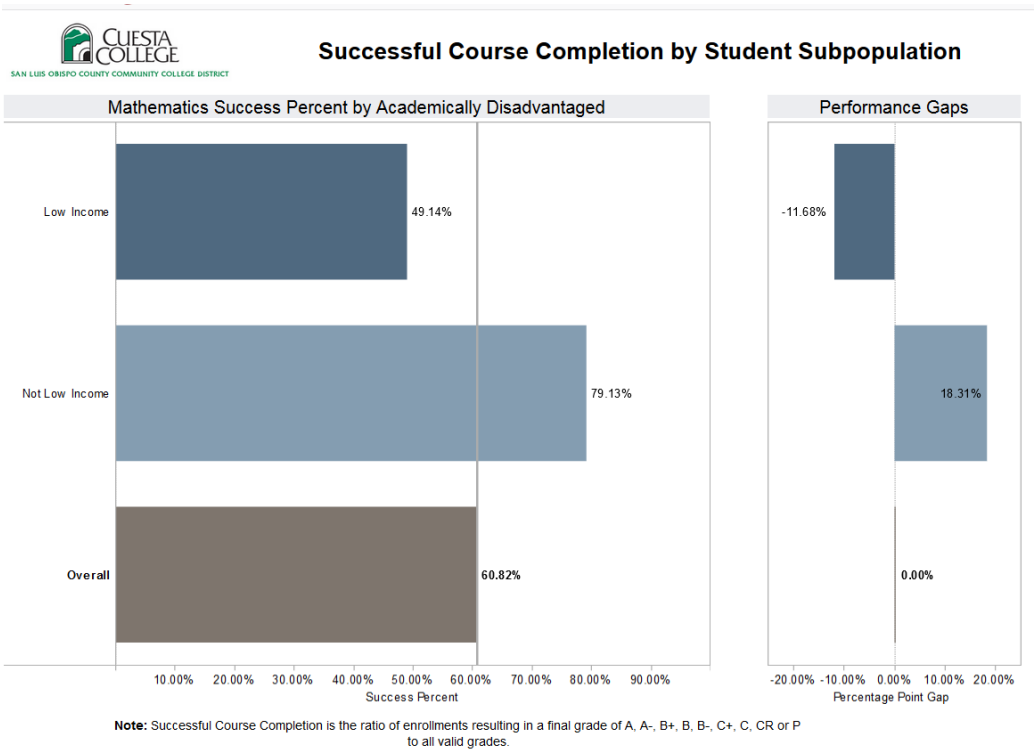
First Generation: There isn't a huge gap between First and Not First (about 7%), but first generation students are still ones to keep our eyes on.

Promise: There's a 9.81% gap between Promise and Not Promise, which is interesting. Age is probably a confounder here since the Promise students are in that Under 20 group noted above. In addition, some of these young students may not commit sufficient time and energy to their courses due to undervaluing the free course.



Very concerning: (Note: We've included a few charts for impact; i.e., to show the disconcerting picture of the gravity of the situation.)

"**Academically Disadvantaged**" which is comparing Low Income and Not Low Income groups. There is close to a 10% difference between Low Income and Overall); This is pretty alarming. Our low-income students are failing at a high rate.



As a first step to address this disparity, a study is being disseminated among the Math faculty where there was significant improvement in science exam results among economically and otherwise disadvantaged students when steps were taken to reduce their anxiety about taking a science exam. We will share these steps and explore using them in our classrooms.

Low income students may have a variety of added stressors such as limited access to books and supplies, food insecurity, child care responsibilities, significant work hours, and limited time to access tutoring support. We can increase our communication in our classes about services on campus such as financial aid, the Food Bank, online tutoring support, etc.

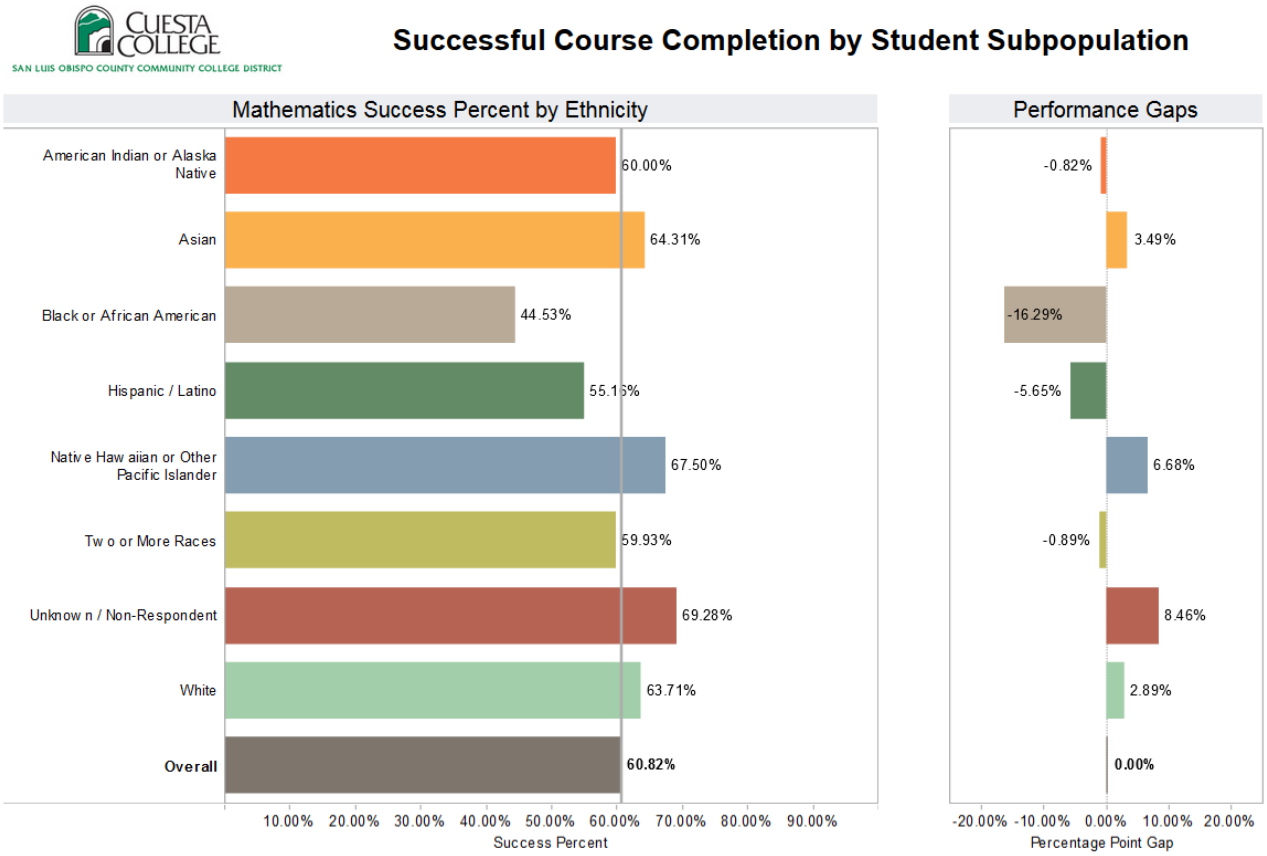
Ethnicity:

Black: We saw a huge gap in success for Black students. 16.3% vs overall (all sites, all five years)

Trend: We were improving 2013 – 2016, from a low of about 20% gap to 9% gap, then tanked again in 2016-2017 (21% gap), then improved in 2017-18 (back up to 9% gap). There were about 60 – 90 students in this group per year.

Campus: Looking at site-specific data, we found the achievement gap was much, much worse in SLO than on NCC. The gap was 20.5% overall over the 5-year period in SLO vs. 2.5% in NCC over the same period.

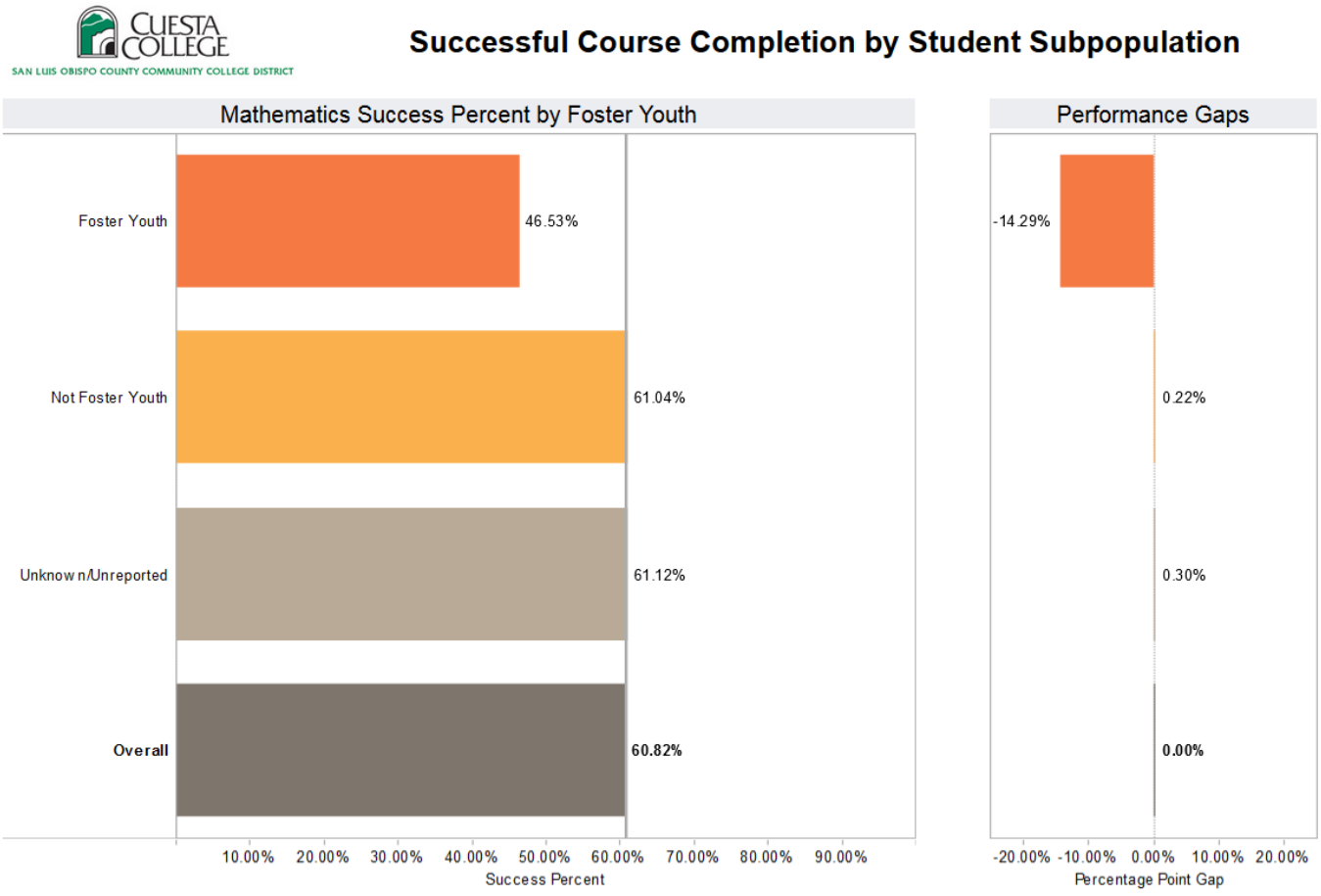
Latinx: The gap for Latinx bounces around 5-7% on both campuses over the 5-year period with no trend. There is a slightly greater gap in SLO than NCC.



Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.

The Mathematics Division has been actively involved in beginning to address equity gaps. Several instructors attended/will attend an Equity Minded Teaching Institute in June 2018, The Equity Summit October 2018, and/or The Equity Academy in April 2019. These instructors have and will participate in follow up discussions and classroom observations with others across campus. Our Division has decided to start sharing some of the learned best practices at our meetings and retreats throughout the school year. One practice many faculty adopted Fall 2018, was rewriting their syllabi to be more welcoming to first generation college students.

Foster Youth: We had 634 Foster Youth over the five-year period. Their success rates declined steadily for the first four years from a high of 54% to a low of 39% success. They popped back up in 2016-17 to 47% but clearly this group is still really struggling.



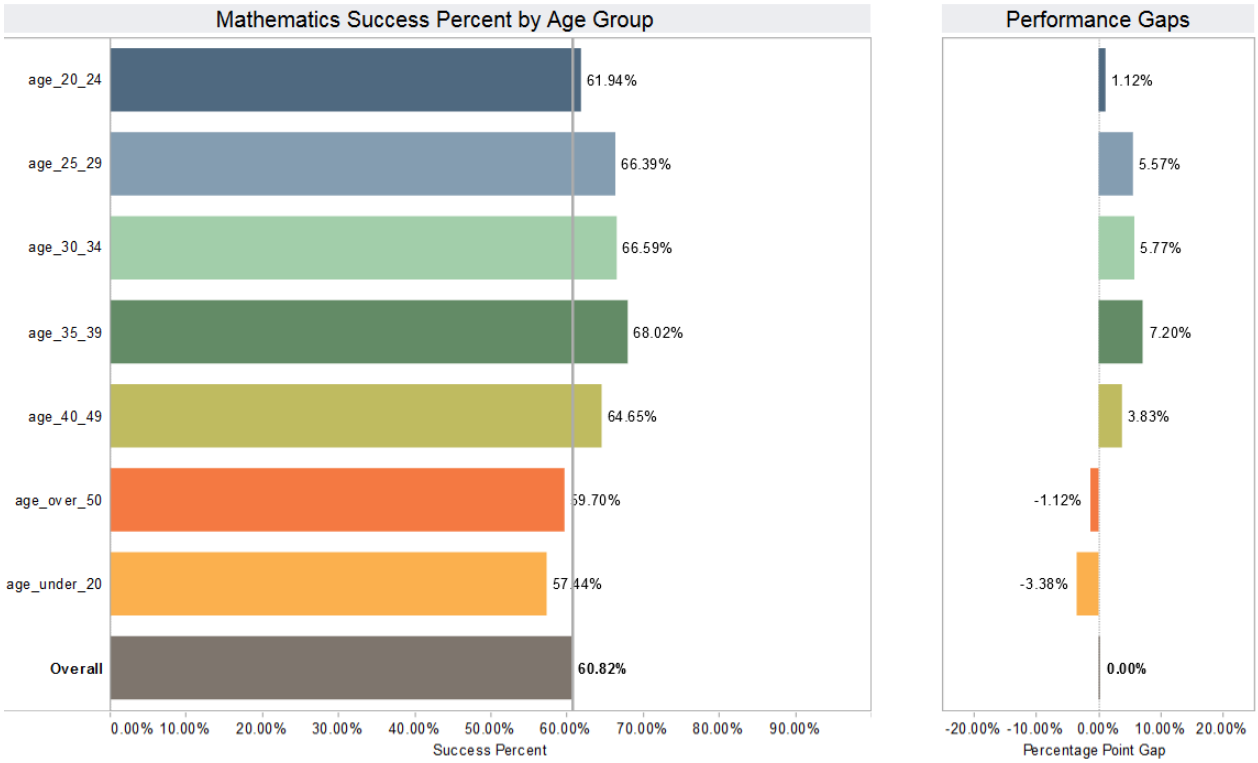
Summary:

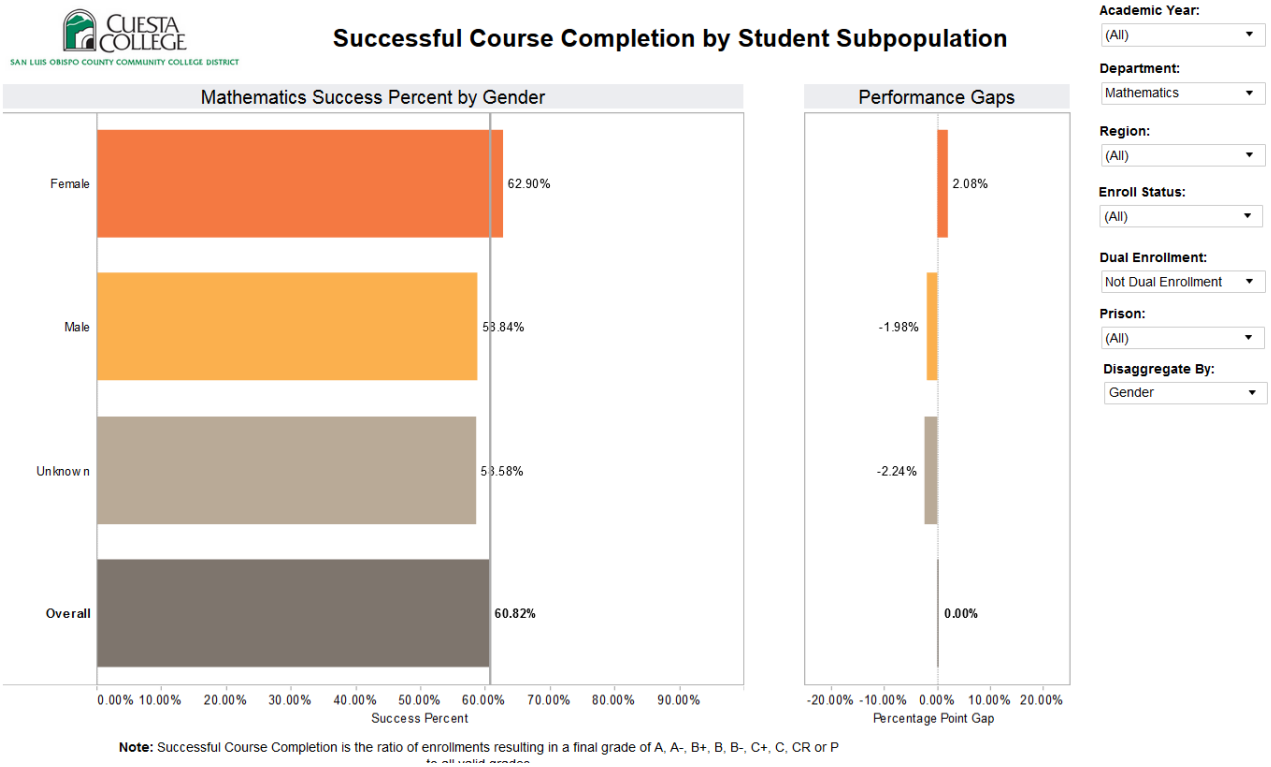
Our work on increasing support for mathematics courses with the implementation of AB705 should benefit all subgroups. The increased communication with the Success Center and added tutorial support should help all students as well as the incorporation of "just in time review" among other plans noted at the end of this document for AB705.

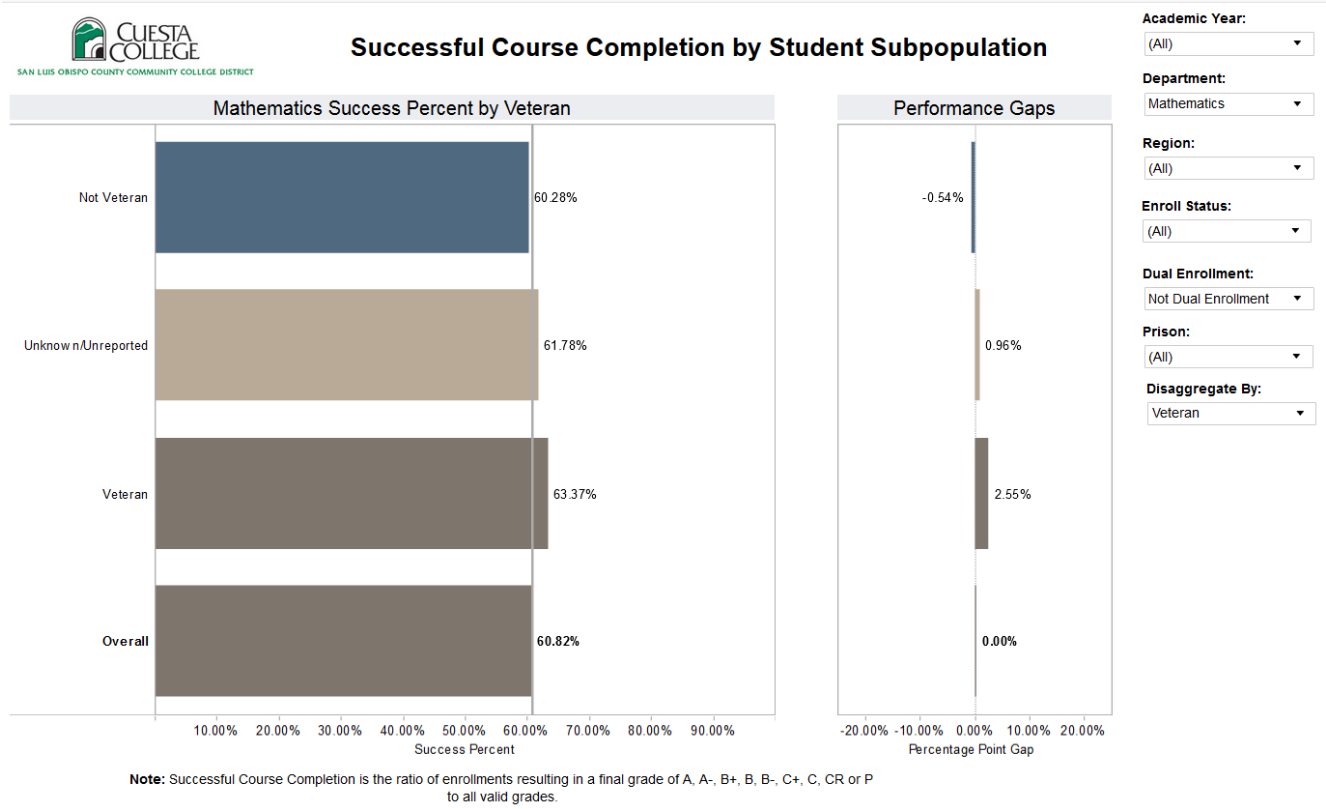
One observation is that DSPS students and Veterans both have dedicated resources on campus. A Black Student Union or something like might be really helpful for our black students. Foster Youth are supported through CaFe. We could try to increase communication with the special programs and utilize Equity funds as needed to try to help bridge the gap.

The Mathematics Division will also be working toward all faculty adopting early alert outreach to struggling students early in the semester by sharing ideas and reminders

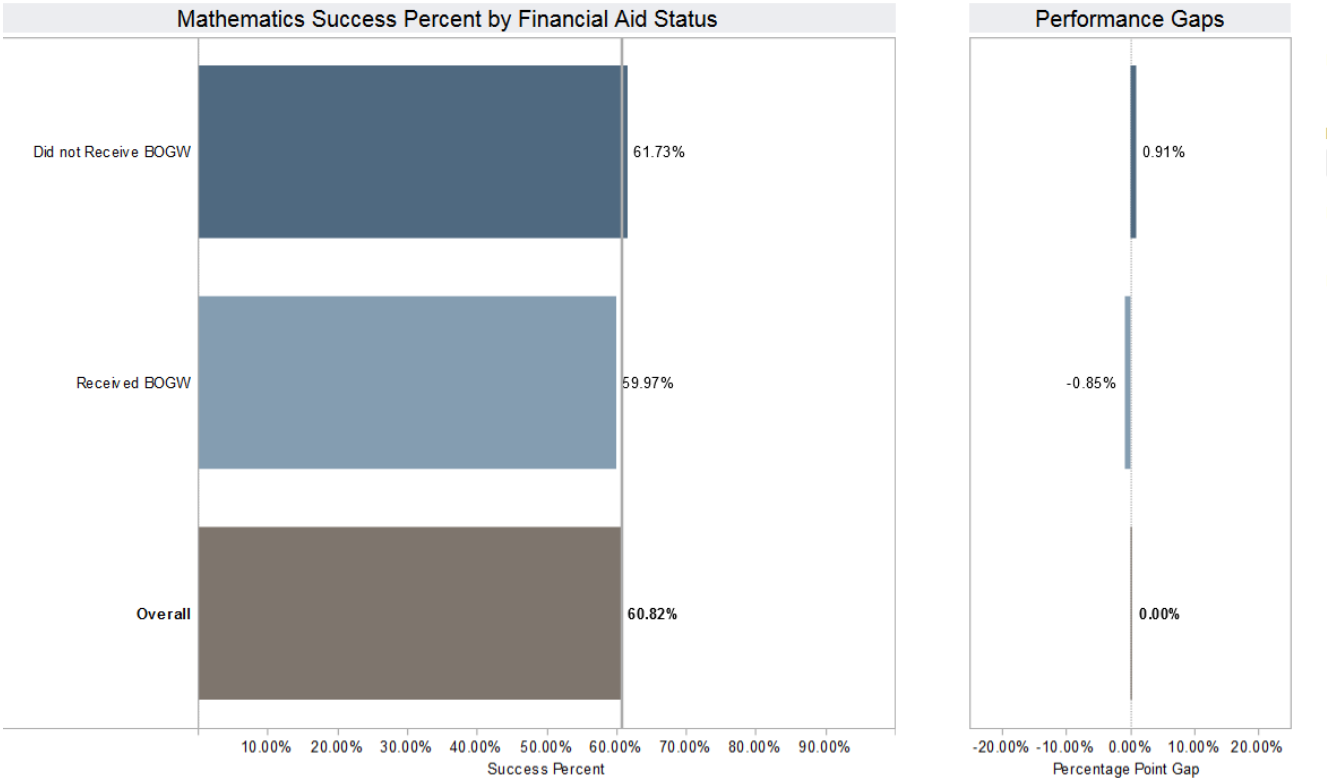
Extra charts:



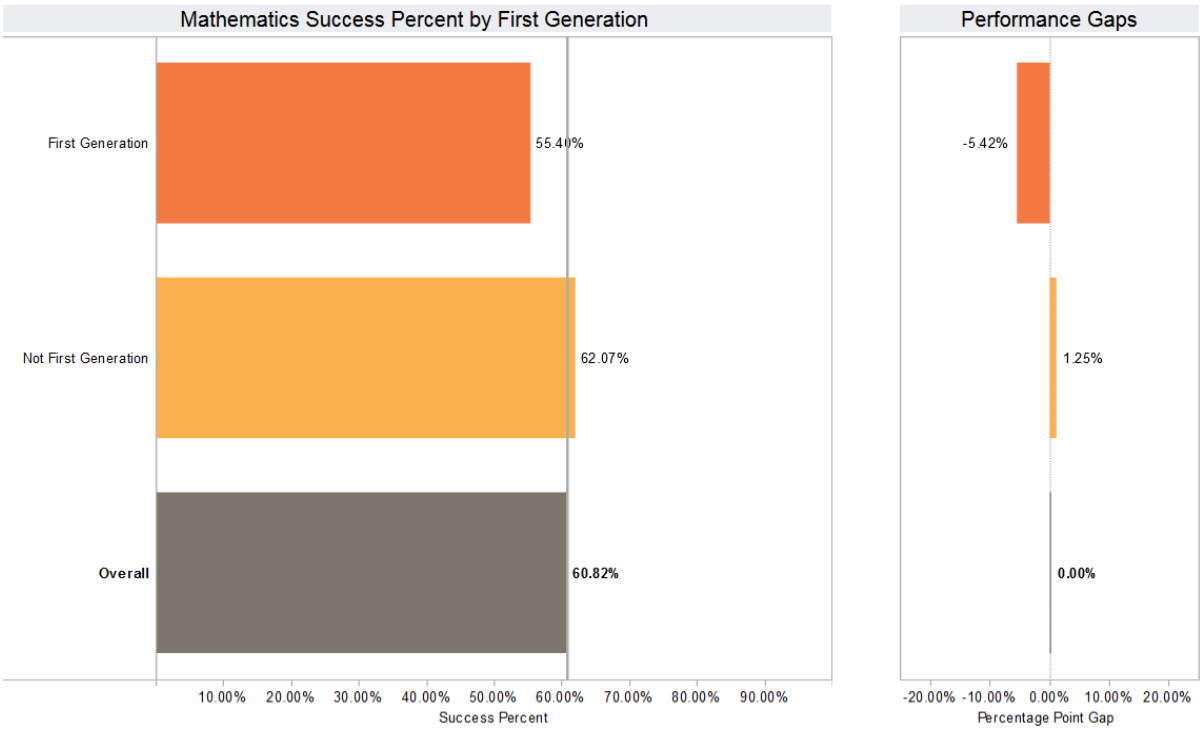




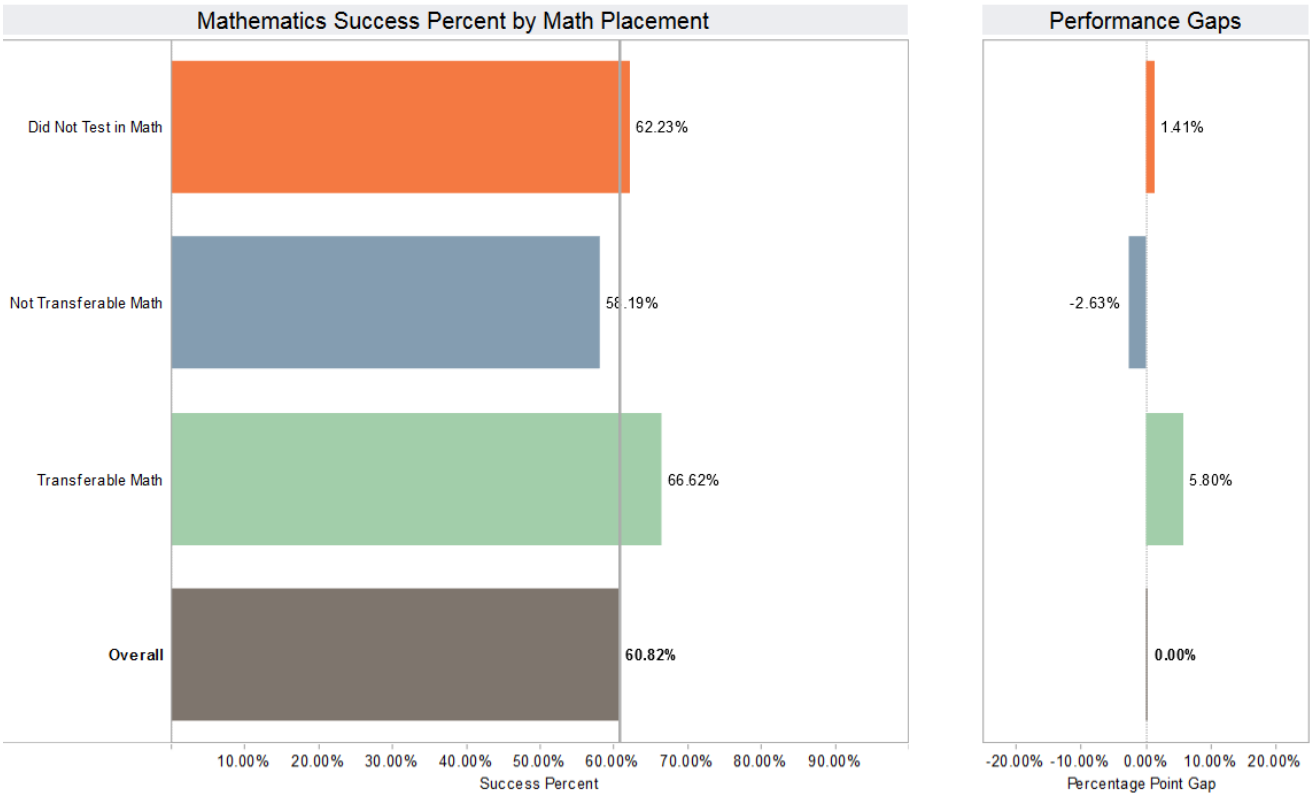
Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.



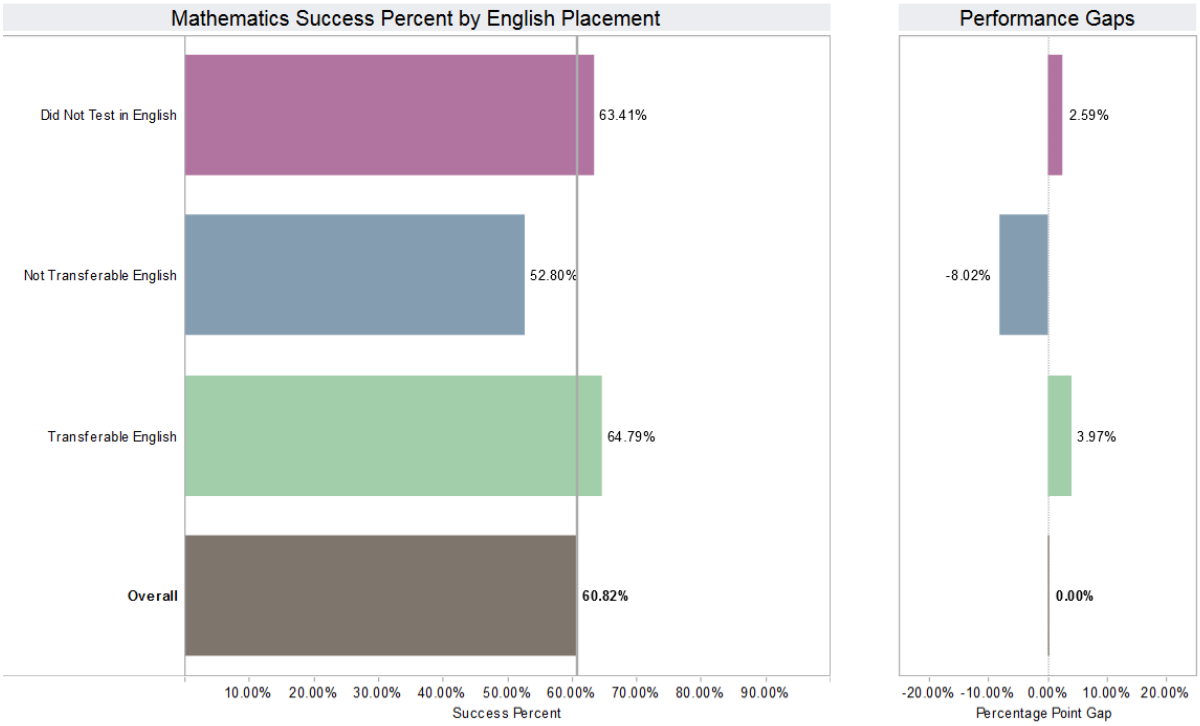
2019 INSTRUCTIONAL ANNUAL PROGRAM PLANNING WORKSHEET



Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.



Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.



Note: Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.

OTHER RELEVANT PROGRAM DATA (OPTIONAL)

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.*

The Division has begun following the new SLOs assessment calendar and has recently moved to a 3 point scale in eLumen for assessing SLOs. Banks of sample problems for the courses assessed are made available to instructors which can be used in conjunction with an instructor's more holistic evaluation of each student's competence in each SLO.

The analysis of the SLOs and plans for course improvement continues to be discussed on the day of our Math Retreat prior to the start of our semester. The discussions have been expanded to use SLOs as the impetus to develop improvements for the given course and pre-requisite courses. For example, during the Fall 2018 discussion of Math 283, we expanded the discussion to the preparation and focus needed in the pre-requisite calculus courses. All calculus instructors participated in the dialog and determined the pre-requisite courses should increase focus on parametrization, add more numerical examples, ensure solid integration skills, etc. In addition to making adjustments to individual courses, a Student Prep workshop was offered to all calculus students to enhance weak trigonometry skills . Many of the other course SLOs discussions this year have dovetailed with the AB705 needs providing resources and practice for "just in time skills" in all of our courses.

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.
B. Anticipated changes in curriculum, scheduling or delivery modality
C. Levels, delivery or types of services
D. Facilities changes
E. Staffing projections
F. Other

New Additions to the Program:

- **Mathematics is now offered at California Men's Colony**
  - **Spring 2019: Math 230, Math for Humanities**
  - **Fall 2019: Math 247, Introduction to Statistics and Math 230, Math for Humanities**
- **Distance Education offerings are being expanded**
  - **Current offerings include Math 123, Math 127, Math 232 and Math 247**
  - **Math 232, College Algebra, and Math 247, Introduction to Statistics distance learning courses are going through the process to become OEI certified**
  - **Math 230, Math for Humanities, will be offered DE Fall 2019**
  - **Math 255, Business Calculus, will be offered DE Fall 2019**
  - **Math 242, Precalculus, will be offered DE Spring 2020**
- **Dual Enrollment was added at Atascadero High School**
  - **Math 242 and Math 265A**
- **Math 220, Mathematics for Elementary Schools Teachers first offered Spring 2019 and due to demand will be offered every semester**
- **Math 255 will have another option as a pre-requisite, Math 232, College Algebra, which is less of a barrier than the Math 242 option.**
- **Equity: Multiple math faculty have attended conferences and workshops related to best practices in the classroom in light of teaching with equity in mind. Among the new ideas, many faculty reworked the presentation of their syllabus to be more welcoming to first generation college students.**

AB705 Related Plans and Changes:

- **Increase offerings of Math 247, Introduction to Statistics and Math 230, Math for Humanities and decrease pre-transfer offerings**
- **Implement Comevo guided placement messaging for Fall 2019 incoming students**
- **Offer Math 147S, Statistics Support for students with weaker math backgrounds**
- **Collaborate with Student Success Center to enhance support:**
    - **A part time Statistics Lab was piloted during 2018-19 which will morph into a full time statistics tutoring lab in 2019-20.**
    - **Use of embedded tutors has increased and more dialog has been shared about effective practices with embedded tutors.**
    - **Recruitment of statistics tutors has increased and future development of more Math 230 tutors is being planned.**
    - **There has been increased focus on Math 242 support.**
    - **Math faculty and Success Center staff have increased communication in math classrooms about the Center's offerings**
    - **The Math Division shares calendars and testing dates to help guide peak staffing needs in the Math Lab.**
    - **The Math Division shares resources to post on the Success Center webpage such as MyOpenMath, Khan Academy, MathisPower4you, etc.**
- **Mediated Math 021, 122, 126A, 126B will no longer be promoted in Class Finder, however, they will still be available for instructors to use as a safety net. In addition, Mediated math will serve as a good option for students who find they need to drop down to Math 127, as they can start at the beginning of the material at any time.**
- **Student workshops for "just in time skills" like trigonometry review for calculus and factoring for all algebra/precalculus levels have been offered and will be expanded.**
- **Canvas Course shell for courses like Math 232, College Algebra with learning modules of "just in time skills" that students can self enroll in from any section of the course are being developed.**
- **More "just in time" review homework practice is being embedded in all courses.**
- **Starting Spring 2019, instructors are spending more time during the first two weeks to ensure students are in the correct class for their major. In addition, if instructors are concerned about a student's extremely weak pre-requisite skills, they will communicate options for the needed skill building: online resources posted on the Success Center web page, extra time planned for the Math Lab and office hours, and/or transferring to a prerequisite course --- especially for the STEM courses**
- **Messaging about campus support and student planning will be increased throughout the semester by Math faculty in their classrooms. We will seek advice from Student Services about accurate messaging.**

Budget Notes:

The division will continue to evaluate the implementation of the Student Centered Funding Formula (SCFF) and what the division can do to support the fiscal stability of Cuesta College. Currently, the division is focused on the following:

- **Implementation and support for AB705, which is the best way for the division to increase the number of students that successfully complete transfer level math and English courses in their first year.**
- **Encouraging students to apply for financial aid**
- **Encouraging students to apply for earned degrees and certificates, which our transfer level students may neglect to do.**
- **Support implementation of Guided Pathways which should increase success rates as well as earned degrees and certificates.**
- **Continue to work with at risk populations in order to increase their success rates.**

Staffing Notes:

- **The Math Division is particularly short staffed on the SLO campus with both full time and adjunct faculty. We've had many retirements among both full time and adjunct faculty and have had more than one unsuccessful part time pool recruitment.**
- **There was a loss of about 40 FTEs in mathematics from Fall 2017 to Fall 2018 to the college due to inadequate course offerings due to lack of staffing.**
- **We will be hiring two tenure track faculty for Fall 2019. One of the positions will fill our current full time temporary schedule and the other will have a statistics emphasis due to the exploding demand for Statistics.**

Facilities Notes:

- **4112 instructor technology was upgraded**
- **Efforts are being made to convert a classroom into a computer lab for statistics and Mediated classes so that 3301 can be used as a Statistics Lab.**
- **2601 will become a mixed use room with a cart of Chromebooks to allow for overflow Statistics courses to be offered along with our other math courses.**
- **If demand for Statistics begins to demand a full 3rd classroom space, we will seek to convert the mixed use room, 2601, into a computer lab prepared for full day use.**