2020 Annual Program Review

Program Name: Mathematics

Program Review Author: Gail Edinger and Colleen McGraw

I. PROGRAM DESCRIPTION: In one or two paragraphs, provide a description of the primary goals of your program or service area. Attach an appendix to describe your program or service area in more detail, if needed.

Note: If no changes have occurred, feel free to copy and paste from your last review. If it exists, feel free to copy the brief description of your program from the college catalog: http://www.smc.edu/CollegeCatalog/Pages/default.aspx

The Santa Monica College Mathematics Department serves a large and diverse student population. The course offerings are desinged to meet the needs and requirements of the full spectrum of students at the college. The curriculum includes a minimal offering of pre-transfer level courses, transfer level applied courses, and the traditional sequence of transfer courses required by a student in a STEM (science, technology, engineering and mathematics) field. The transfer level applied courses represent the courses required for most non-STEM majors.

The faculty of the math department are deeply committed to both maintinaing high standards and providing our students the support required to meet these standards. Our goals are to have students participate in those courses where they have the skills needed for success, gain the skills they need for success in future courses and leave our department ready to be successful as they transfer to 4-year institutions, enter graduate or professional school, or begin their careers.

II. PROGRESS SINCE LAST REVIEW (LAST YEAR'S OBJECTIVES)

Identify the original objectives from your last review, as well as any objectives that emerged during the year (if applicable). For each objective, determine status and explanation for status.

Objective	Status (Check one)	Status Explanation
Use data to evaluate effectiveness of new AB 705 compliant placement model.	☐ Not Completed ☒ In Progress ☐ Completed	The department has reviewed the data from fall 2019 but is unable to effectively use the data from spring 2020. The review process will continue once information is received from the Chancellor's Office on how to integrate spring 2020 data into the evaluation process.
Offer, evaluate and revise (as necessary) the AB 705 compliant co-requisite courses, Math 54+54C, Math 21 + 21C, Math 26 + 26C and Math 2 + 2C.	☐ Not Completed ☐ In Progress ☒ Completed	The department offered a fully compliant AB705 curriculum beginning with the fall 2019 term.
Develop and Evaluate a Guided Self-Placement (GSP) for incoming students.	☐ Not Completed ☐ In Progress ☒ Completed	All Santa Monica College students can now use the Guided Self-Placement for initial placement in mathematics courses.
Click or tap here to enter text.	☐ Not Completed ☐ In Progress ☐ Completed	Click or tap here to enter text.
Click or tap here to enter text.	☐ Not Completed ☐ In Progress ☐ Completed	Click or tap here to enter text.

III. ACHIEVEMENTS

(Optional) List any notable achievements your program accomplished in the last year.

1. Offered a fully AB705 compliant curriculum increasing access to transfer level math courses for all student groups.
2. Closed the equity gap experienced by First-Time-In-College (FTIC) Latinx students in terms of enrollment in transfer-level math courses. *
3. Tripled the number of FTIC Black students enrolled in transfer level math courses. *
4. Increased first term throughput for FTIC students. Most notably increasing the number of Black students successfully completing transfer level math their first term by 142% and the number of Latinx students by 91%. *
5. Expanded student academic support by increasing the number of sections with embedded tutors and SI assistants.
6. Faculty members participated in the pilot run of the new GPS system.
7. Judith Moser, Math Lab Coordinator, received a Spotlight Award for her work in the math lab.
8. Set up and provided initial funding for a campus food bank administered through the math lab.

*Based on information provided in the AB705 Report from Institutional Research

IV. CURRENT PLANNING AND RESOURCE NEEDS

Part 1: Narrative

Broadly discuss issues or needs impacting program effectiveness for which institutional support or resources will be needed for the next academic/fiscal year.

The Mathematics Department is actively involved in many department and campus-wide initiatives and activities. This includes curriculum development and evaluation, student equity projects and programs, assessment, and summer programs. Math Department faculty are leaders in STEM, the Pathways Initiative, Equity, and all aspects of shared governance.

Over the last three years the energy and focus of the department has been on developing, implementing, and providing student support for the curricular changes required by AB 705. Placement, course offerings, course content, and student support methods have all been affected by AB 705. The math department is dedicated to doing what is necessary to provide a positive experience for all mathematics students, while maintaining the quality education the students at Santa Monica College deserve and striving to meet the success and equity goals of the college.

Initial student placement is now done using a Guided Self-Placement (GSP). Students complete the GSP by providing in information about their high school coursework, high school GPA and planned pathway. After completion almost all students are placed into one of the first-tier transfer level courses: Math 2 or 2+2C, Math 54 or 54+54C, Math 21 or 21+21C, or Math 26 or 26+26C. Students may opt to self-place into a course below transfer level, including Math 31, Math 20, Math 50, Math 18, or Math 1. Math 1 is a self-paced course which uses adaptive learning software. The Chancellor's Office has given community colleges until Dec. 3, 2020 to complete the verification of all placement processes, so it will be imperative that placement data is analyzed during the next six months.

There was a significant increase in the percentage of introductory transfer level sections offered by the department over the last year. During the fall 2018 term, 43.8% introductory sections were at the transfer level and by fall 2019 this number had increased to 70.5%. This indicates a corresponding increase in access to introductory transfer level classes. The percentage of First Time In College (FTIC) freshman enrolled in a transfer level class in their first term also increased, from 12.4% during the fall 2018 term to 30.4% during the fall 2019 term. According to information provided by Institutional Research, in the *Fall 2019 AB 705 Impact Report (Draft*), "the largest proportional gains [were] experienced by Black and Latinx students who saw more than two times the percentage of students who enrolled in transfer-level

math in the initial term."

Initial success results from the AB 705 compliant courses were mixed and varied by course. The tables below give the raw numbers for enrollment and outcomes for students in each of the introductory transfer level courses offered in the math department. The fall 2016 – 2018 terms are pre-AB 705 and fall 2019 is post-AB 705. The courses shown are the introductory transfer level courses for which the department developed co-requisites. The data represents enrollment in both traditional sections and co-requisite supported sections.

Math 21

	Enrollment	Success	¬Success	Incomplete	Retention	GPA
Fall 19	465	227	238		340	2.17
Fall 18	372	211	161		272	2.53
Fall 17	364	198	166		288	1.95
Fall 16	384	214	170		292	2.25

Math 26

	Enrollment	Success	¬Success	Incomplete	Retention	GPA
Fall 19	214	93	119	2	136	2.16
Fall 18	227	99	128		166	1.74
Fall 17	237	81	156		151	1.49
Fall 16	257	119	138		172	2.23

Math 54

	Enrollment	Success	¬Success	Incomplete	Retention	GPA
Fall 19	2349	1071	1267	11	1665	2.05
Fall 18	1649	848	801		1172	2.30
Fall 17	1452	793	659		1030	2.37
Fall 16	1389	699	690		973	2.29

Math 2

	Enrollment	Success	¬Success	Incomplete	Retention	GPA
Fall 19	879	321	557	1	529	1.97
Fall 18	672	313	359		476	2.28
Fall 17	819	390	429		585	2.16
Fall 16	863	388	475		572	2.16

(Data from Tableau, Feb. 2020)

There were increases in enrollment in all introductory transfer level courses, except Math 26, which has seen steadily decreasing enrollment since fall 2016. All other courses showed increases in throughput, with corresponding increases in students who were not successful in completing the course.

Overall success rates in introductory transfer level courses decreased by about 7%, from 51% during the fall 2018 term (Pre-AB 705) to 44% during the fall 2019 term. Black and Latinx students continued to experience the largest equity gaps in success rates, but there was little change between the pre- and post-AB 705 success rates. The graphs below, published by Institutional Research (*Fall 2019 AB 705 Impact Report (Draft*)), show the relevant success rates and equity gaps.

Figure 15. Intro Transfer-Level Math Success Rate by Ethnicity/Race in Fall Terms

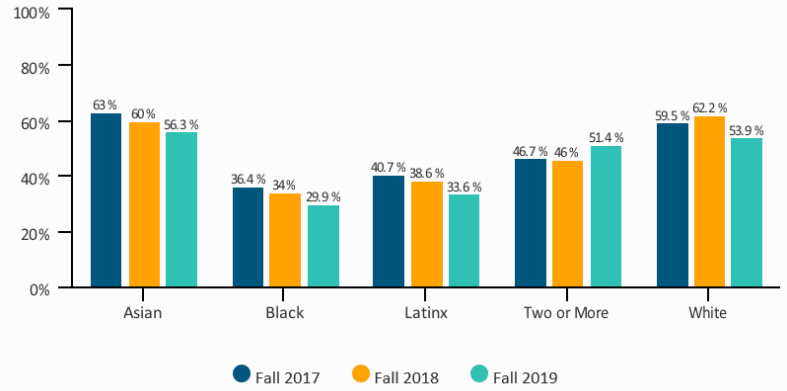
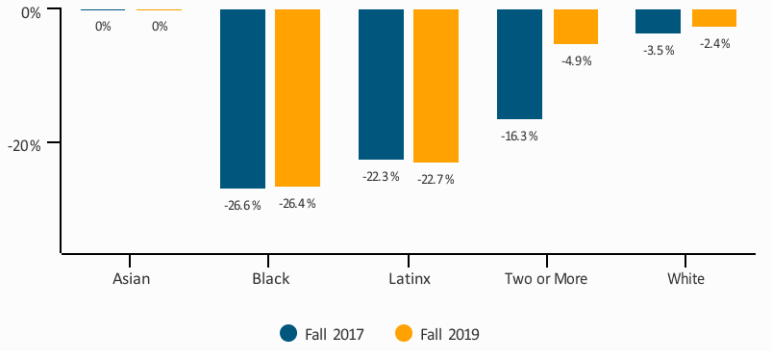


Figure 16. Intro Transfer-Level Math Course Success Racial Equity Gaps - Fall 2017 vs. Fall 2019



Although the increases in access, enrollment and throughput in the introductory level transfer courses were promising, additional work need to be done to understand and decrease the equity gaps in the math department.

There was also a difference in the success rates in the traditional and co-requisite supported courses. The graph below shows the comparisons. ((*Fall 2019 AB 705 Impact Report (Draft*))

Figure 19. Fall 2019 Comparison Intro Math Course Success Rates - With vs. Without Co-Requisite

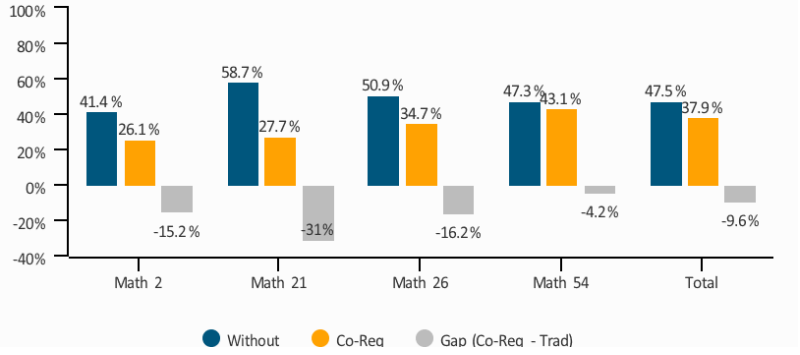
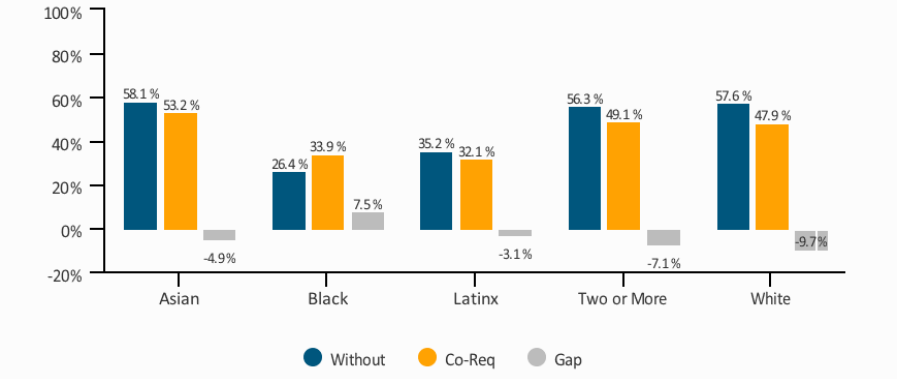


Figure 20. Fall 2019 Comparison Transfer-Level Math Course Success, With and Without Co-Requisite, by Ethnicity/Race



The success rates in all co-requisite courses were lower, but this not entirely unexpected. The students placed into the co-requisite courses were generally the ones with lower high school GPAs, or less previous math experience. Once there is additional data, a comparison between throughput and success rates of students who enrolled in co-requisite courses and similarly qualified students from previous semesters should be done.

Going forward the department will analyze the internal data from the first semesters of AB 705 compliance and work to address any issues related to student success and equity. This is an important part of the state required verification and evaluation process. Course committees will use the data and feedback from teaching faculty to revise and expand support in Math 1 and each of the co-requisite supported courses. Changes proposed or implemented already include changes to the day-to-day schedules, changes to the scheduling of just-in-time remediation, and improved communication with part-time faculty who are assigned support classes. There is still significant evaluation, development, and creative work to be done. The department will continue to work to improve these courses and to pursue and research ways that noncredit classes can be used to support our students in our corequisite and non-corequisite courses. The work to evaluate the placement process, to review data, and revise courses is labor intensive and will require significant support from the college.

At the beginning of the 2019-2020 academic year the department submitted a proposal for Faculty Leads for Math 1 and each co-requisite course. The Faculty Leads would be responsible for leading the review of the equity and success data, heading the revision committees, reviewing feedback from teaching faculty, implementing any new state requirements, training any new first-time teaching faculty and acting as a liaison with counseling and other campus areas for their assigned course. This proposal received preliminary approval, but ultimately did not receive final approval. To maintain, review and improve outcomes in Math 1 and all co-requisite courses, the department will need support for the proposed Faculty Leads.

During the 2019-2020 hiring cycle the college recognized that the math department was severely understaffed, and the department received approval to hire three new full-time department members and to hire an unfilled position from the previous hiring cycle. Due to the COVID-19 pandemic related budget concerns, all four positions were not filled. The decision not to fill these four positions, the retirement of two additional full-time math faculty, and the retirement of four productive long-term associate faculty makes the understaffing issue even more critical. The department will need more full-time faculty to continue to do the work of the department, work on campus-wide initiatives and provide representation on campus committees.

To support remote instruction the department will need support to offer additional faculty development in distance education on methods to provide equitable access and outcomes, increase student participation and engagement, and maintain community, both professionally and in the classroom. Technology training will also continue to be important. Faculty would benefit from opportunities to learn LaTex and other technologies that can be integrated into Canvas.

Part 2: List of Resources Needed

Itemize the specific resources you will need to improve the effectiveness of your program, including resources and support you will need to accomplish your objectives for next year.

While this information will be reviewed and considered in institutional planning, the information does not supplant the need to request support or resources through established channels and processes.

Resource Category	Resource Description/Item	Rationale for Resource Need (Including Link to Objective)
Human Resources	1) Full-time Faculty 2) Faculty leads for Math 1 and all co-requisite courses	The decision not the hire any of the four positions allotted during spring 2020 and the retirement of two additional full-time faculty and four long-time Associate faculty has left the department with a limited ability to complete and update required projects. Continued development and revision of the co-requisite courses is an important part of the future of the department and time is required for the leadership of the development groups to complete this task.
Facilities *(info inputted here will be given to DPAC Facilitates Comm.)*	1) New desks in classrooms that promote group work and interaction between students. 2) Improved placement of and access to technology in classrooms. 3) New white boards or chalk boards in classrooms with worn units.	Math classrooms are often cramped and outfitted with older furniture, technology, and supplies.
Equipment, Technology, Supplies *(tech inputted here will be given to Technology Planning Committee)*	1) Updated Software for remote teaching of mathematics 2) Additional TI-84 Plus Calculators for students on pathways requiring an applied math course. 3) Access to websites or technology that would improve evaluation and testing methods in a remote or online class.	If courses continue to be remote, updated technology will be needed to continue to offer the students of SMC high quality math classes.
Professional Development	1) Remote class development 2) Technology training 3) Equity training	General improvement and development of math classes and training for faculty in the latest best practices in technology, equity and course development.

V. CHALLENGES RELATED TO SPRING 2020 COVID-19 CRISIS AND RESPONSE:

List significant challenges your program faced in Spring 2020 due to COVID-19. Please also Include your responses and

solutions to this crisis.

The department response to the transition to remote instruction was led by Colleen McGraw, Aaron Simo, and Kristin Lui-Martinez. Many other faculty members contributed to and participated in the effort to make the transition as smooth as possible. The math department for spring 2020 included over 100 full and part-time faculty members and nearly 250 courses covering the entire spectrum of the department curriculum. In less than one week all these classes were successfully migrated to the remote learning environment.

1. Working with remote teaching technology

Transitioning to teaching in a remote environment within just a few days was a significant challenge for most faculty members. The department set up and provided four days of workshops on using Canvas, Zoom and other relevant technology. Discussions included not just instruction on how to use the technology, but on best-practices for teaching in a remote environment. Several department faculty members made themselves available to both math department faculty and faculty from other departments who needed individual assistance setting up and using the available technology resources. The dedication and expertise of those who volunteered their time helped to move all math department classes successfully to the remote environment.

2. Facilitating discussion on best practices for remote teaching

After the move to the remote environment, there were continued discussions on instructional strategies, student engagement, accessibility, equity, evaluation, and other best practices for remote teaching. The department set up a module on the department homepage and devoted significant zoom department meeting time to faculty development and discussion on these topics.

3. Continuing to provide learning support through the math lab

The dedicated employees of the math lab, led by Math Lab Coordinator, Judith Moser, moved all the math lab functions to Zoom within just a few days. This effort made it possible for all SMC students to continue to receive the free learning support provided by the Math Lab with no interruption.

4. Addressing challenges faced by students

The math department policy during the spring semester became one that promoted flexibility. Through emails, department meetings and other communications the department encouraged all faculty to communicate and work with students to meet their needs. Several faculty members participated in the pilot of the new GPS communication system. The math department was one of the top contributing groups to the Meal Project administered by the SMC Foundation.

5. Development of course shells and other materials for all math department courses

The decision by the college to move all fall 2020 to a remote environment and the need to complete the paperwork to receive at least emergency approval for all math department courses prompted the organization of a department distance education working group to develop course shells and other standardized educational materials that could be used in a remote environment. This group meets each Thursday to work on a generic department course shell, to discuss articles and videos provided for review, and to plan the future of distance education in the math department. The initial plan is to develop a generic department shell that can then be modified for each course.

VI. THE NEXT SECTION IS FOR CTE PROGRAMS ONLY

PARTNERSHIPS:

Part 1: Industry advisory meeting dates and attendance for 2019-2020.

Date of Meeting	# of SMC Attendees	# of Non-SMC Attendees

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Click or tap to enter a date.	Click or tap here to enter text.	Click or tap here to enter text.

Part 2: Employer partnerships/collaborations for 2019-2020. Identify the most salient partnerships or collaborations.

Employer Name	Type of partnership or Collaboration • Advisory attendance • Internship site • Donations • Job placement • Other	Optional: Additional information about partnership or collaboration
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CONGRATULATIONS – that's it! Please save your document with your program's name and forward it to your area Vice President for review.

The following section will be completed by your program's area VP

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Vice Presidents:

First, please let us know who you are by checking your name:

☐ Christopher Bonvenuto, Vice President, Business and Administration
☐ Don Girard, Senior Director, Government Relations & Institutional Communications
☐ Sherri Lee-Lewis, Vice President, Human Resources
☐ Jennifer Merlic, Vice President, Academic Affairs
☐ Teresita Rodriguez, Vice President, Enrollment Development
☐ Michael Tuitasi, Vice President, Student Affairs

☐ Next, please check this box to indicate that you have reviewed the program's annual report Provide any feedback and comments for the program here:

Click or tap here to enter text; the box will expand when you enter text.

Finally, please **save the document** and email it to both Stephanie Amerian (amerian_stephanie@smc.edu) and Erica LeBlanc (leblanc_erica@smc.edu). If you have any questions, please contact us!

Thank you for your input!