

Beta Annual Program Review Questions 2019

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, copy and paste from last year's 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 designed to meet the needs and requirements of the full spectrum of students at the college. The curriculum includes 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 applied courses are transferable courses required for most non-STEM majors.

The faculty of the math department are deeply committed to both maintaining 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. PARTNERSHIPS:

(CTE only):

Part 1:

Industry advisory meeting dates and attendance for 2018-2019. Insert additional rows as needed:

Date of meeting	# of SMC attendees	# of non-SMC attendees

Part 2:

Employer partnerships/collaborations in 2018-2019 (insert additional rows as needed):

Employer Name	Type of partnership or collaboration: <ul style="list-style-type: none">• Advisory attendance• Internship site• Donations• Job placement• Other	Optional: Additional information about partnership or collaboration

III. PROGRESS SINCE LAST REVIEW (LAST YEAR'S OBJECTIVES):

Identify the original objectives from your last review as well as any new objectives that have emerged since then (if applicable).

For each objective, determine status and explanation for status.

Objective	Status (Completed, in progress, not started, no longer pursuing)	Status Explanation
Develop the curriculum for and offer two sections of Math 20 using ALEKS, an adaptive learning system.	Completed	Two sections of Math20, with ALEKS were offered Spring 2017. Four sections of Math 1, Bridge to College Mathematics, were offered fall 2018.
Engage faculty in professional development by attending conferences, reviewing the work of other colleges to be trained in developing an AB705 mathematics curriculum.	Completed	Conferences attended throughout 2018 by faculty involved in developing AB705 compliant courses. Faculty also attend several conferences, including NCORE, relating to equity.
Develop an AB705 compliant non-STEM pathway.	Completed	Three sections of Math 54+54C, Elementary Statistics with Support, piloted Spring 2019.

IV. ACHIEVEMENTS:

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

Over the past year the math department has extensively revised the department curriculum to be fully AB705 compliant. This has included:

- Revising Math 50 to be a fully open access course.
- Developing and offering Math 1, Bridge to College Mathematics, which uses ALEKS an adaptive learning program.
- Developed co-requisite support courses Math 54C, Math 2C, Math 3C, Math 4C, Math 21C, and Math 26C.

V. ASSESSMENT AND EVALUATION

Part 1: Outcomes and Evaluation Results

A. Reflect on the outcome assessment (PLO, SLO, UO) data that your program reviewed in the current year (2018-2019) that have yielded **notable** or **actionable** findings. Insert additional rows as needed.

Note: It is not required that you mention every outcome assessed in your program.

What outcome were you assessing?	How was the outcome assessed?	What were the results of the assessments?	Describe any changes that are planned or in progress to address the results
<i>Develop success skills and academic behaviors including use of class notes and required text, regular attendance, timeliness, participation in class activities, and adherence to the College Honor Code and other codes of conduct.</i>	Through course grades including taking attendance, graded activities and other class required activities.	The department felt that students could benefit from addressing success skills. The department developed a file of exercises to address the affirmative domain.	Affirmative Domain exercises will be integrated into all support courses.

B. Reflect on other effectiveness data you collected and analyzed for the program this year.

1a: Course Success and Retention (Instructional Depts Only)

After reviewing the course success and retention rates for your program, describe how these rates reflect the overall effectiveness of your program, and discuss any planned changes or actions your program plans to take to address the results (if applicable). *Access data in Tableau (<http://tableau.smc.edu>)*

Between fall 2017 and fall 2018 success and retention rates did not change significantly. The department retention rate for fall 2018 was 73.5%, up by 0.9% from fall 2017. The department success rate for fall 2018 was 46.9%, down by 0.6% from fall 2017.

The changes to curriculum and placement required by AB 705 are significant. The department has spent the last year developing an AB 705 compliant curriculum, always taking student success, retention and equity into consideration. The department will continue to monitor success, retention, equity and throughput rates for all student groups.

1b: Racial and Other Equity Gaps for Course Success (Instructional Depts Only)

After reviewing the course success rates by ethnicity/race and other demographic variables, identify any equity gaps, and discuss any planned changes or actions your program plans to take to address the gaps (if applicable). *Access data in Tableau (<http://tableau.smc.edu>)*

Between fall 2017 and fall 2018 equity gaps for success and retention did not change significantly. The ethnic/racial groups of African-American and Latinx experiences the largest disproportionate impact interms of successful course completion. In fall 2017, these groups has respective course success rates 14.7% and 9.0% lower than the overall average of 46.9%. When compared to their performance in fall 2017, the equity game for African-American students decreased by 1.3% and by 1.6% for Latinx students.

The math department remains committed to equity. The department will continue to collect and analyze success data for all students groups during the transition is made to an AB 705 compliant curriculum and placement model.

2: Degrees and Certificates (Instructional Depts Only)

After reviewing the numbers of degrees and certificates awarded by your program, describe how the data reflect the overall effectiveness of your program, and discuss any planned changes or actions your program plans to take to address the results (if applicable). *Access data in Tableau (<http://tableau.smc.edu>)*

The math department offers one degree, the Mathematics AS-T. The department is pleased to report that over the last three years the number of students earning this degree has nearly doubled each year. During the 2015-2016 academic year, 10 students earned this degree, during the 2016-2017 academic year there were 21, and during 2017-2018, there were 41 students earning an AS-T. This indicates that for students who are interested in transferring in mathematics or

a mathematics related field, the department course sequence is effective. The department will continue to promote the degree and use the courses required for the degree to prepare students for higher level work in mathematics. It is hoped that with the implementation of the Pathways program, the number of Mathematics AS-T degrees awarded will continue to increase.

3: Additional Data Demonstrating Effectiveness (If applicable)

If available, describe the results of other data indicating the effectiveness of the program and discuss any planned changes or actions your program plans to take to address the results.

Examples of other data include: surveys, document reviews, observations, performance indicators, focus groups/interviews, advisory committees, labor market demand, license exam pass rates

Part 2: Analyses of Results

This question is designed to bridge the results of your evaluation and outcomes assessment with next year’s objectives (VI).

In one or two paragraphs, describe what you have learned about your program and how this knowledge will inform your plans for next year.

During the 2018-2019 academic year the department will focus on evaluating and revising the new AB 705 compliant curriculum. The changes affect all student groups, academic pathways and every instructor in the department. This will require the department to work closely with other academic departments, counseling, assessment and nearly all of the special programs on campus. Significant support from the college will be required to provide support for students and meet the staffing and professional development needs of the department.

VI. NEXT YEAR’S OBJECTIVES:

Itemize any specific strategies or projects you plan to accomplish next year to improve the effectiveness of your program. *Limit 3 objectives.*

Objective	Rationale for Setting Objective <i>Link to data, if applicable.</i>
Use data to evaluate effectiveness of new AB 705 compliant placement model.	Required by AB 705.
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.	Required by AB 705.
Develop and Evaluate a Guided Self-Placement (GSP) for incoming students.	Required by AB 705.

VII. CURRENT PLANNING AND RESOURCE NEEDS:

Part 1: Narrative

Broadly discuss issue or needs impacting program effectiveness for which institutional support or resources will be needed for the coming 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.

Moving forward the energy and focus of the department will be on developing, implementing and providing student support for the curricular changes required by AB705. The goals of AB705 are easy to state, but implementation has been one of the biggest reform projects undertaken by our department. Placement, course offerings and content, and student support methods have all been affected by AB705. The math department is dedicated to doing what is necessary to make this the best possible experience for students, while always working to maintain the quality education the students of Santa Monica College deserve and striving to meet the success and equity goals of the college.

AB705 - History

State Assembly Bill 705 (AB705) was signed by the Governor of California on October 13, 2017 and took effect on January 1, 2018. The bill requires that a community college district or college maximize the probability that a student will enter and complete transfer-level coursework in English and math within a one-year timeframe and use, in placement of students into English and math courses, one or more of the following: high school coursework, high school grades, and high school grade point average.

Under AB705, colleges must place students in a transfer level class, unless the college can demonstrate that the student is highly unlikely to succeed at the transfer level and the college can also demonstrate that the student’s likelihood of completing a course at the transfer level in one year is at least as high as direct placement.

AB705 intends to accomplish:

- A reduction in the number of remedial courses students are required to complete prior to attempting a transfer level class
- An increase in the number of students eligible for transfer by increasing the number of students that meet the transfer level math and English requirements
- An improvement in equity related outcomes

Over the past year and half, the department has had four working groups attending conferences and meetings, working with the Assessment Center and Counseling, and participating in professional development activities to meet the legally required fall 2019 deadline for full AB705 compliance.

Placement and Course Offerings

AB705 requires that nearly all students be placed directly into a one-semester transfer level mathematics course. With few exceptions, the college cannot place students directly into a pre-transfer level class. Students will be placed into classes using course attainment in high school and high school grade point average (GPA). This can be reported through a high school transcript or self-reported. Where this information is unavailable, the department has worked with the Assessment Center to develop an online Guided Self Placement (GSP) that will help students choose a math class. Students entering summer 2019 will be fully placed under this new placement system. Continuing students will be able to use the GSP to obtain an updated placement.

During the fall 2018 semester the math department offered 245 sections, of which 132 (53.8%) were considered pre-transfer level or basic skills classes and 113 (46.2%) were considered transfer level. The working plan for fall 2019 is to offer 218 sections, of which 53 (24.3%) will be considered basic skills and 161 (75.7%) transfer level. This dramatic change in section offerings reflects the AB705 requirement that most incoming students be placed into transfer level courses and illustrates what a profound change AB705 has had for both the students and the math department.

The changes in number of sections for pre-transfer level classes offered are summarized in the following table:

Course	Sections fall 2018	Sections fall 2019	Comments
Math 81 – Basic Arithmetic	5	0	Will not be offered beginning summer 2019
Math 84 – Pre-Algebra	7	0	Will not be offered beginning summer 2019
Math 85 – Arithmetic and Pre-Algebra	9	0	Will not be offered beginning summer 2019
Math 31 – Elementary Algebra	27	4	Students will only self-place into Math 31
Math 20 – Intermediate Algebra	29	11	Only incoming BSTEM students with a H.S. GPA of ≤ 2.6 and no pre-calculus or BSTEM students who didn't complete Algebra 2 in H.S. will be placed into Math 20
Math 18 – Intermediate Algebra for Statistics and Finite Mathematics	9	5	Only incoming non-BSTEM students with a H.S. GPA of < 2.3 will be placed into Math 18
Math 32 – Plane Geometry	13	3	Students will only self-place into Math 32
Math 50 – Pre-Statistics	20	20	Only incoming non-BSTEM students with a H.S. GPA of < 2.3 will be placed into Math 50
Math 1 – Bridge to College Mathematics	4	10	Only incoming BSTEM students with a H.S. GPA of ≤ 2.6 and no pre-calculus or BSTEM

			students who didn't complete Algebra 2 in H.S. will be placed into Math 1
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Math 1, Bridge to College Mathematics, is a new course first offered fall 2018 with four sections. Math 1 is an accelerated student-driven path through pre-algebra to intermediate algebra. Students will learn the topics in this course at their own pace in a computer lab with faculty guidance. As students demonstrate proficiency, they will have the opportunity to earn credit for Math 85, Math 31, or Math 20. This course has multiple exit levels where students can earn a grade of "P" for passing the highest-level course mastered and become eligible to enter subsequent courses in their plan of study. The department will use success and retention rates, throughput rates and other relevant data to evaluate Math 1 as the data becomes available.

Math 50, Pre-Statistics is a one semester course to prepare students for the transfer level courses Math 54 and Math 21. This course focuses on the algebra, technology, basic data analysis and mathematical literacy skills necessary for success in these classes. Math 50 has no pre-requisite and has become one the department's most demanded courses. The number of sections of Math 50 offered, and filled, has increased from 7 sections during the spring 2017 semester to 20 sections during the spring 2019 semester. The combination of Math 50 followed by Math 54 or Math 21, provides any student on a liberal arts pathway an opportunity to complete their transfer level math requirement within two semesters.

The decrease in pre-transfer offerings is accompanied by an increase in transfer level course offerings. The most significant change will be in the number of sections of Math 54, Elementary Statistics, offered. During the fall 2018 term 45 sections of Math 54 were offered, for the fall 2019 term, 65 sections are currently planned.

The department has been working to develop and train instructors who previously taught pre-transfer level classes to teach Math 50, Math 54 and Math 21. This will be an ongoing project for the department.

Development of Co-Requisite Classes

Many math department faculty members have attended conferences offered by the California Acceleration Project (CAP), to develop an understanding of the law and to research different ways our courses can be structured to be AB705 compliant.

The colleges that have led the way in AB705 compliant courses have found success with co-requisite courses. The math department chose to follow a pair-course model and developed co-requisites for 6 separate courses. The co-requisite courses are designated as C classes and are each a 1- or 2-unit course. In all cases the transfer course and the paired co-requisite will be taught by the same instructor. The department will continue to offer the more traditional sections which are not paired with a co-requisite class. Depending on high school GPA and high school math attainment, students will be placed into a section either with or without co-requisite support.

Co-Requisite Courses Developed

Liberal Arts Pathway		
Math 54+54C	Elementary Statistics with Co-requisite Support	3 sections Piloted spring 2019; 29 Sections planned for fall 2019
Math 21+21C	Liberal Arts Mathematics with Co-requisite Support	1 section to be offered summer 2019; 5 sections planned for fall 2019
Business Pathway		

Math 26+26C	Functions and Modeling for Business and Social Sciences with Co-requisite Support	1 section to be offered summer 2019; 3 sections planned for fall 2019
STEM Pathway		
Math 2+2C	Precalculus with Co-requisite Support	2 sections to be offered summer 2019; 9 sections planned for fall 2019
Math 3+3C	Trigonometry with Applications with Co-requisite Support	4 sections planned for fall 2019
Math 4+4C	College Algebra for STEM Majors with Co-requisite Support	4 sections planned for fall 2019

Teaching, evaluating and revising these new courses will be a department-wide activity. Every instructor with a full-time assignment will be teaching both Math 1 and Math 50, or at least one co-requisite paired class during the fall 2019 term. To evaluate the new courses, the department plans to look at data including success and retention rates, and the number of students that successfully complete a transfer level math class. The department also plans to support ongoing discussions for each cohort of teaching faculty to assess student learning, ways to enhance teaching in each course, revisions to the co-requisite curriculum and any other topics that will support the implementation of the new curriculum and teaching methods.

Providing Student Support

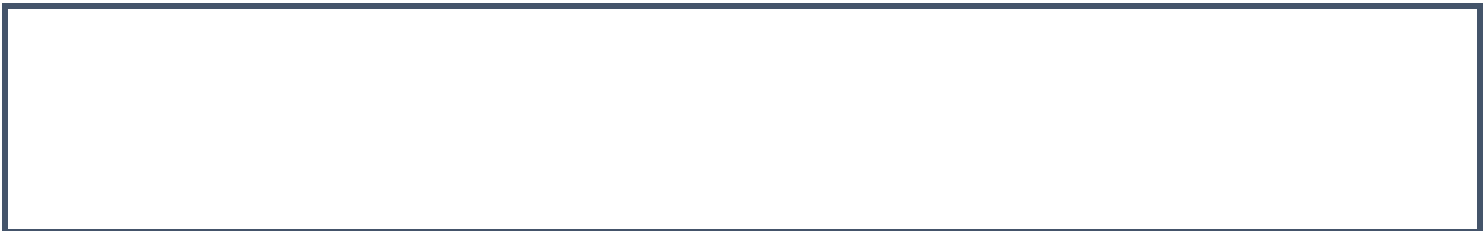
Though the number of basic skills mathematics courses is decreasing, the number of students who are at the basic skills level is not changing. Under the new placement system, many students will begin the math sequence 1 to 3 levels above where they would have started under the pre-AB705 system. While this will decrease the number of math classes required to meet their transfer goal and will hopefully increase the number of students who complete a transfer level course, this new placement model will require many students begin in a more challenging course, both in terms of content and pace. We owe it to the more than 50% of our students who would have entered at the basic skills math level to determine how to provide support and work toward the success of all students in mathematics courses.

Throughout the development of the co-requisites, each working group discussed how best to support student learning. The co-requisite course design principles developed by the California Acceleration Project and supported by the Chancellor's Office encouraged the use of "just-in-time remediation," a system which integrates a review of a mathematical skill just before that skill is needed in the transfer course curriculum. The co-requisite course materials were developed using this approach. The math department hopes that many students will succeed with the support provided by the co-requisite, but co-requisite support alone will not be enough for every student. The department currently provides and, with the support of the college, plans to continue to provide additional support through:

- Embedded Tutors in all co-requisite sections
- Supplemental Instruction for all levels of courses
- Professional development and training for all instructors teaching co-requisite sections
- An embedded counselor in all co-requisite sections
- Attention to the affective domain in all co-requisite sections
- Instructor lead workshops and study sessions for each class
- Finals Week study and review sessions

- Shared office hours
- STEM boot camps for Math 2, 3, 4, and 7
- A focus on early intervention for struggling students
- If possible, late start classes for students that need to drop back and have a more focused review before attempting a transfer level course

AB705 has required a complete revision of the department curriculum and will place new demands and stressors on faculty and students. Developing and training faculty to be able to reach all students in a diverse population with a wide range of needs, academic goals, interests, hopes and dreams is not a job that math department can accomplish alone. The department will be seeking assistance from other departments, counseling and the administration to determine how we can all work together to support our students. The process has been and will continue to be for many semesters to come, a challenging and transformative project for the entire mathematics department



Part 2: List of Resources Needed

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

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

Resource Category	Resources Description/Item	Rationale for Resource Need (Including Link to Objective)
Human Resources	New full-time faculty	The department is understaffed and cannot meet the course requirements of AB 705.
	Math Lab Staff	Math Lab is understaffed and cannot effectively meet student demand.
	Embedded Tutors, Supplemental Instructors	Needed to support students in the new AB 705 compliant support course.
Facilities <i>(information inputted here will be provided to DPAC Facilitates)</i>		
Equipment, Technology, Supplies <i>(information inputted here will be provided to TPC)</i>	Classroom furniture appropriate for a collaborative learning environment.	All newly developed support classes require a collaborative learning component.
Professional Development	Faculty development including, but not limited to equity, best practices for teaching support classes, support	Provide best practice support to students with equity and success as a focus.

	for part-time faculty to participate learning communities	
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VII. CHALLENGES:

(Optional) List significant challenges your program faced in the past year (optional)

Over the past year the math department has completely revised the curriculum to be AB705 compliant. There was and will continue to be a significant challenge to increase student success and retention, while maintaining the quality of education that the students of Santa Monica College expect and deserve. With this also comes the challenge of keeping all faculty teaching support courses aware of the expectations and following the planned curriculum for these courses.