

# AB 1705 Frequently Asked Questions (FAQ) Webinar - February 7, 2023

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## Introduction

This FAQ summarizes answers to questions raised during the California Community Colleges Chancellor's Office (CCCCO) February 2023 webinar on key provisions of AB 1705, which will take effect in July 2023.

AB 1705 builds on AB 705 – the landmark effort to maximize the probability that students enter and complete transfer-level coursework in English and math within a one-year timeframe. It addresses issues underlying inequitable and uneven implementation of AB 705 and supports the system's work to revamp placement systems and curricular structures in support of equitable placement and completion outcomes.

For more information on AB 1705 implementation here.

For more information on AB 705, visit <https://assessment.cccco.edu/>.

## AB 705 Outcomes

### **What about students who drop a class? [Since the implementation of AB 705], has there been an increase in students dropping transfer-level courses before the official census date (typically 3 weeks into the term)?**

Colleges do not report pre-census enrollment to the CCCCCO. The census date is the time in the semester when students' enrollment is counted for state funding purposes (Title 5, section 58004), and colleges are legally required to remove students for nonattendance before this date. The census date is used in all student outcomes metrics reported to and by the CCCCCO, such as throughput, course success rates, and retention rates.

Because enrollment shifts are typical prior to and in the first few weeks of the term and pre-census data is not reported, we cannot tell if there has been a change in students dropping before the census date. However, colleges concerned about this issue might consider evaluating it locally and developing research-informed innovations that help create a sense of confidence, belonging, and support for students in the first few weeks of the term.

### **How can we trust AB 705 outcomes data when it is mixed with COVID-19 data?**

Colleges should expand their corequisite support offerings, which enable students to review foundational concepts and skills while taking transferable courses. Now more than ever, students cannot afford to waste time and money on courses that do not transfer. Improvements in students' access to and completion of transfer-level English and math coursework are consistent whether you isolate them to fall 2019 (pre-pandemic) or after 2020-2021. Find all data (by starting year) on the CCCCCO's [Transfer-Level Gateway Completion Dashboard](#).

### **[Have the AB 705 outcomes] data been separated into Liberal Arts vs Science, Technology, Engineering, and Math (STEM) pathways? They should be looked at independently from one another.**

Yes, we have disaggregated the data by math pathway (i.e. Statistics and Liberal Arts Math (SLAM), Business-STEM (BSTEM)) and found similar trends. The Research and Planning Group for California Community Colleges' (The RP Group) Multiple Measures Assessment Project (MMA) plans to further disaggregate by math class type in 2023. This research will build on MMA work presented today showing that starting in transfer-level math is more beneficial than starting below transfer level across math courses, no matter a student's high school math preparation.

We are seeing improvements in completion in STEM by all student characteristics post-AB 705 implementation. We have yet to identify a student group that has not benefited from the changes, in either math pathway, even during the terms most impacted by COVID-19. You can explore your own college's outcomes by Grade Point Average (GPA) band for each pathway using the CCCCCO's [Transfer-Level Gateway Completion Dashboard](#).

### **Are the success rates disaggregated by modality (online vs in-person)?**

These data are not available at the state level by modality, but that disaggregation would be great to pursue locally!

## **Are equity gaps growing under AB 705, [and] will these gaps be perpetuated by AB 1705?**

No. Every group examined to date has higher completion of transfer-level English and math post-AB 705, but some colleges are seeing larger gaps between groups. One key factor is that colleges continue to disproportionately enroll Black and Latina/o/x students in remedial courses, driving down their completion rates. Fully eliminating these gaps will also require attention to other institutional drivers of inequity, including classroom policies and practices. While more attention is needed, the solution is clearly not to return to a time when all students performed worse.

## **How can the CCCCO support practitioners in closing equity gaps post-AB 1705?**

AB 1705 addresses issues underlying the uneven and inequitable implementation of AB 705. By implementing AB 1705 with fidelity, we anticipate that equity gaps in access to and enrollment in transfer-level English and math will close. By ensuring that students of color begin at the transfer level, colleges will make progress toward stronger and more equitable completion of those courses. Additional strategies for fostering equitable completion are part of the AB 705 improvement plans that colleges submitted to the CCCCO in March 2022. It is the responsibility of the college to implement those strategies, including the use of Student Equity and Achievement funding to support that work. The CCCCO also worked to secure \$64 million in additional funds to support AB 1705 and the equity imperative that underlies it.

## **Default Placement Rules**

**I have been sent data about English and students who are at the Algebra 2 level, but nowhere do I see the data that now states that the prior placement guidelines provided by The RP Group are now invalid. What has changed that now claims these placement guidelines must be changed?**

The default placement rules are still valid for English and math. Specifically in regard to the Algebra 2 recommendation, research conducted by MMAP after we released the default placement rules found that students have a higher completion of transfer-level math courses when they start at the transfer level, regardless of their high school preparation. Find additional information in [Maximizing Math Throughput of Students Who Did Not Complete Algebra 2 in High School](#).

## **Do the default placement rules still apply to AB 1705?**

The default placement rules are still valid. The default rules suggest that colleges require or strongly recommend that students in the lowest high school GPA bands receive corequisite support. This guidance still holds under AB 1705. In math, the default rules applied to placement into statistics/liberal arts math or precalculus/college algebra/trigonometry. Subsequent research extended the default rules to students who had not completed Algebra 2 in high school. Find additional information in [Maximizing Math Throughput of Students Who Did Not Complete Algebra 2 in High School](#).

However, AB 1705 also stipulates standards for placing students into the lowest transfer-level course for their degree or major, which include courses that were not part of the default rules, such as finite math, applied calculus, and the first STEM calculus course. MMAP will conduct prerequisite validation studies over the next two years to determine guidance for student placement into these courses.

## Below Transfer Level Placement and Enrollment

### **Could we justify offering basic skills math for students who attempted and were unsuccessful in transfer-level courses?**

To enroll students who have an academic goal of certificate, degree or transfer in pre-transfer coursework, the college needs to provide evidence that the pathway maximizes completion of transfer-level math, which is unlikely based on research to date. A study from the Public Policy Institute of California (PPIC) found that when students start in a transfer-level course, they have better chances of successfully completing — even if they do not pass on their first try — than if they start in a course below transfer level. The study also found that students who were unsuccessful in their first attempt at transfer-level math were also less likely to be successful in their other courses, which shows that many of these students may struggle with more than just math content. This research suggests that colleges may need a wider range of supports to help these students make progress toward their academic goal.

### **What if students want to place themselves below transfer? Even after waivers and talking about data and such, there are still students who will want pre-transfer math. Do we turn them away? I understand the data indicate they will do worse, but can we stop them if they insist?**

The easiest way to avoid this problem is for your college to stop offering pre-transfer courses. When students express an interest in starting below transfer level, they are expressing a desire to “start at the beginning” or to “build skills for later success,” they are not asking to start in coursework that hampers their progress or completely derails them from achieving their goals. But when a college maintains pre-transfer courses, students believe that these offerings must help, otherwise why would the college have them? It is the college’s responsibility to ensure that students receive (a) equity-minded and capacity-oriented advising; (b) information about corequisite courses, tutoring, and other academic support; and (c) reassurances that help counter the insecurity and uncertainty that is a natural part of starting college.

As to the letter of the law, under AB 1705, colleges cannot enroll students with an academic goal in English or math courses below transfer level *unless* (a) the college has provided evidence that the pathway in which the student enrolls maximizes their likelihood of completing transfer-level courses within a year of enrolling in the discipline, or (b) the student is part of a specific population identified as exempt under the law. Colleges that continue pre-transfer English or math options must restrict enrollment to students explicitly identified in the law; these populations include [insert]. These courses are no longer an option for the general student population because colleges have the obligation under AB 1705 to ensure that policies, structures, and practices support students to achieve their dreams, not derail them.

### **Provision Two of AB 1705 specifies validation is required for transfer-level prerequisites. What about college-level prerequisites? [Are they] explicitly barred, or [are they] allowed as a part of a one-year pathway to and through transfer level?**

Colleges have had the opportunity to submit data multiple times over the last four years to validate intermediate algebra and other college-level prerequisites under AB 705. At this point, extensive state and local studies show that pre-transfer coursework does not meet AB 705 or AB 1705 standards, and only specific subgroups of students identified in AB 1705 can be enrolled in pre-transfer English or

math. Research has shown that two-course pathways (including stretch models) do not maximize one-year completion. Students are more likely to complete if they begin in transfer-level courses.

Based on these findings, AB 705 never allowed a two-course pathway to and through transfer-level coursework, given that it required colleges to place students into coursework that maximized their chances of completing transfer-level coursework within a year. The CCCCO addressed this misunderstanding in guidance over the years since the legislation's implementation.

## AB 1705 Definitions and Clarifications

### Which students does AB 1705 apply to?

Under AB 1705, colleges have an obligation to students with an academic goal of certificate, degree, or transfer, and to students who are undecided about their goals.

Students who have an academic goal related to programs with transfer-level English and math/quantitative reasoning requirements must start in courses that maximize the probability that they enter and complete those requirements within a one-year timeframe of their initial attempt in the discipline. Students who are undecided about their specific academic goal are included until they decide they are not pursuing a goal of certificate, degree, or transfer.

### What is considered transfer level at the community college level? We've been using the University of California (UC)/California State University (CSU) [Course Identification Numbering System \(C-ID\) descriptors](#) as our bar.

Transfer-level courses in general are courses that satisfy general education requirements or lower division coursework for students' major at either the UC or CSU.

### What is the meaning of "gateway transfer-level course?"

The phrase "gateway transfer-level course" is short-hand for the lowest transfer-level course that satisfies the English or math requirement for a student's intended credit certificate or associate degree, or the course requirement for transfer within their intended major. For example, in the [Transfer Model Curricula for Business Administration](#), gateway transfer-level courses include statistics, applied calculus, and finite math but not college algebra.

### Can we have a \*transferable\* example to clarify the meaning of "math/quantitative reasoning coursework that does not satisfy requirements for the certificate, degree, or transfer within the student's intended program or major?"

College algebra is an example of a transfer-level course that some colleges require students to take as a prerequisite to business calculus or the first STEM calculus course. However, it does not satisfy course requirements for business or STEM degrees.

### Will there be an audit of each college's fall 2023 course schedules to ensure AB 1705 is being followed?

Yes, the CCCCCO will check college catalogs as part of the compliance process.

**How will the CCCCCO ensure that math courses align with students' majors? Especially early on (e.g., [during] application or matriculation), a student's major is not a good predictor of behavior or of actual major. So, when will major/intent be required to be aligned with course taking?**

By August 1, 2024, AB 928 requires California community colleges to place a student on an associate degree for transfer (ADT) pathway if the student declares a goal of transfer on their mandatory education plan and such a pathway exists for their intended major. This requirement, in addition to guided pathways work, should help ensure that students begin in the right math for their area of interest.

**Does this AB 1705 guidance mean that if a student is a declared STEM major, they should not be allowed to enroll in statistics unless that course is part of their program of study, even if they freely chose it, and it is not a prerequisite?**

Students with a declared STEM major should begin in coursework that helps them make progress toward their degree. This expectation is consistent with guided pathways work and consistent with CCCCCO goals for reducing the number of extraneous units students take. However, there are no prohibitions in AB 1705 that preclude a STEM major from taking statistics in addition to the math course requirements for their program of study.

**If a student declares a credit certificate program [as their goal], but the program does not require transfer-level English or math, the student is not expected to complete transfer-English or math coursework, or even enroll directly into transfer English or math?**

That is correct.

**There are students who start a CTE certificate, and after experiencing some success, they decide to pursue a scaffolded degree in their second year. If their first attempt at taking transfer English and/or math is in their second or third year, will the success be measured from the point they start each subject? (In other words, if they start English in the second year and math in the third year, is each subject's success evaluated separately?)**

Yes, completion is measured from the point that they start in each subject separately.

**In the context of AB 1705 language, is a "course" referred to per the semester system? I'm wondering how to interpret if the community college is on a quarter system.**

A semester system includes two terms to make up an academic year, while a quarter system includes three quarters to make up an academic year; therefore, two courses in a semester system is the same as three courses in a quarter system.

**Is throughput the standard measure for demonstrating effective pathways?**

Yes, throughput is the standard measure for demonstrating effective pathways. For example, students starting in course X who are still enrolled at the first census make up the cohort. Throughput is the percentage of the cohort that successfully completes the gateway transfer-level course within the specified period.

## Corequisite Support Courses and Tutoring

**Can we still offer corequisite courses if students in those courses have lower completion rates than students in the standalone course without the required support? Is that a fair comparison to make?**

Yes, a college may continue to offer corequisite courses under these circumstances.

AB 1705 requires colleges to provide access to academic support, such as corequisites or tutoring, for students enrolled in transfer-level coursework. The law allows colleges to require some students to enroll in corequisite coursework if it is determined that the support will increase the student's likelihood of passing the transfer-level English or math course. This stipulation was also part of AB 705. The CCCCO has not issued guidance or required validation of the effectiveness of corequisites to date because statewide and national research has consistently shown that corequisite remediation attached to a transfer-level course produces higher completion of the transfer-level course when compared to prerequisite remediation. In past guidance, the CCCCO has recommended that corequisites be required or strongly recommended for students in the lowest high school GPA bands in the default placement rules.

**We plan to offer direct placement into Calculus I for our STEM students. Does this law support a 2-unit optional corequisite on Calculus I and even Calculus II to support the gaps in precalculus content for those who need that support? Especially since these are traditionally barrier classes to STEM success and have large equity gaps?**

Yes, this approach is not only allowed but encouraged. Part §78213(g) of AB 1705 encourages colleges to adopt corequisites in lieu of transfer-level prerequisites to calculus. An optional corequisite for the second calculus course is not prohibited. Please share Calculus I and II disaggregated completion results from this approach with the CCCCO and the field.

**Just want to confirm that if our concurrent support is attached to our transfer-level English, we can use high school GPA to place students in the concurrent support?**

Yes, you can for students in the lowest and middle high school GPA bands.

**We must provide the corequisite support model to students who desire extra support? Regardless of GPA? Does this [guidance] mean we have to offer corequisite support courses to students with high GPAs that we've been placing directly into a stand-alone transfer course?**

No, that is not the case. The law requires colleges to provide students access to concurrent support who need it or want it. Concurrent support can be corequisite coursework or tutoring or other academic support, such as supplemental instruction. Colleges should not require or recommend corequisite coursework to students who had high GPAs when in high school.

**Will the CCCC or another entity be tracking whether campuses are providing concurrent support and [monitoring] the quality of that support?**

The CCCC does not currently have plans to monitor the types of concurrent support or the quality of that support. Concurrent support can include tutoring, supplemental instruction, or corequisite courses linked to transfer-level courses.

**Would campuswide tutoring satisfy the requirement for having support available for students taking a transfer-level course? Or is an actual course like a corequisite required to be made available?**

Campuswide tutoring is viewed as one type of concurrent support that satisfies a college's obligation under part §78213 (k) of AB 1705.

**With respect to our ability to require concurrent support, can we require attending tutoring sessions as a means of concurrent support?**

It depends on the approach to tutoring. Under part §78213 (k)(2) of AB 1705, colleges can require students to enroll in a corequisite course or in a noncredit tutoring course that is required for supervised tutoring. On the other hand, colleges cannot require a student to attend tutoring outside of the hours designated for the transfer-level English or math in which they are enrolled.

**Would replacing a 3 unit transfer-level trigonometry course with a noncredit, 1 unit nontransfer course for a [career education] (CE) certificate be a violation of AB 1705?**

If the CE certificate has no other math requirement and the 1 unit nontransferable trigonometry course satisfies a requirement for the certificate, per advisory board or accrediting body recommendation, this approach would not violate the law. Another possibility is for the 1 unit trigonometry course to be integrated into the certificate program as a disciplinary corequisite to another course within the program or embedded into an existing CE course within the program. Then the situation is outside of the purview of AB 1705 mandates.

**Would 2 unit corequisite courses for trigonometry, precalculus, and/or Calculus I along the STEM track be allowed by the law?**

Yes, 2 unit corequisite courses for these courses would be allowed under the law, particularly as a voluntary option. They could be required for students in the lowest high school GPA bands or for students who have not successfully completed prerequisite coursework.

**Can a 2 unit corequisite support course be required if the content of that support is remediation of skills successfully completed in high school?**

AB 1705 says that students should not be required to repeat coursework that they passed (C or better) in high school, which includes corequisite courses.

**Can colleges now require corequisites?**



Colleges have always been able to require corequisite enrollment, which is still the case under AB 1705. The CCCCO recommends that colleges require or strongly recommend corequisite enrollment for students in the lowest high school GPA bands.

### **Is a 2 unit corequisite considered low unit?**

Yes. Research has shown that a 2 unit corequisite is a promising unit load to see improvements in transfer-level course completion.

### **Can a noncredit "boot camp" model be offered in the summer before a transfer-level course if it is not "required"? Or can it not be offered at all if it's not a corequisite?**

Colleges can only enroll United States (US) high school graduates (or the equivalent) who have an academic goal of credit certificate, degree, or transfer into noncredit English or math coursework if and when the student is concurrently enrolled in a transfer-level English or math/quantitative reasoning course.

While colleges can offer other types of noncredit "boot camps" (i.e., not English or math courses), they cannot be required. It is strongly recommended that "boot camps" be designed as a holistic welcome to the campus to acclimate students to college life and academics.

## **STEM Calculus I and Validation of Prerequisites**

### **Can you talk about the two-course sequence allowed leading to calculus?**

Part §78213 (f) of AB 1705 sets standards for transfer-level prerequisites to the first STEM calculus course. The law allows no more than two transfer-level courses in the sequence prior to the first STEM calculus course. Colleges on the semester system that require some students to complete three transfer-level courses prior to STEM Calculus I (e.g., college algebra, trigonometry, and precalculus) will need to make changes to shorten their sequence. For colleges on the quarter system, a three-course sequence is allowed.

### **One concern from our college is that precalculus is being considered remedial based on the wording of AB 1705 since it is not part of a degree. Any thoughts you can share on that?**

Part §78213 (f) of AB 1705 requires colleges to examine the impact of placing and enrolling students into transfer-level course sequences that prepare students for the first STEM calculus course, such as college algebra, trigonometry, and precalculus. Attrition in the pipeline to Calculus I is high, and many capable students are lost along the way. [PPIC](#) reports that 15% of students who start in college algebra complete a calculus course within three semesters; for those starting in trigonometry, it is 20%; for those starting in precalculus with embedded trigonometry, it is 38%. Students of color are more likely to be denied access to Calculus I and placed into preparatory courses, which contributes to widespread inequity in Calculus I completion and progress in a STEM major. Thus, there is an equity imperative to ensure that placement minimizes the access barrier to calculus, that prerequisites do not hamper the progress of capable students, and that structures designed to remediate or build essential skills for success in calculus help and do not hinder students who need or desire extra support.

### **One question I often get from math faculty that I'd love to be able to better answer is regarding the idea that the data isn't reliable because we aren't blindly placing students into**

**courses. So, for the ask that colleges show proof that, for example, precalculus will support a students' likelihood to complete calculus, is it even possible to demonstrate that [outcome] given that students who are stronger in math will opt into or be placed into calculus, and therefore be more likely to move forward successfully? How do we demonstrate that a student who started in college algebra and made it through to successfully complete calculus would not otherwise have passed calculus without those previous courses?**

Because of ethical and logistical constraints, randomized, controlled trials are often not possible. We use statistical modeling for this reason. For example, MMAP researchers used a combination of decision tree analysis and multiple regression to create the default placement rules. With decision tree analysis, researchers identified high school performance characteristics associated with various levels of success for students starting in a given community college course. Using multiple regression, they could examine the effect of the model's input variables on success rates to control for possible selection bias. Multiple regression analysis creates sets of statistical "twins", so to speak, and examines the success of statistical twins who start at different levels of coursework. These types of statistical analyses are possible because of the variability in placement policies across colleges. Full details are available at [www.rpgroup.org/mmap](http://www.rpgroup.org/mmap).

It is true that statistical modeling cannot prove a cause-and-effect relationship between variables, but it can establish strong association and control the effects of confounding factors. Many commonly held medical findings come from statistical analyses, such as the unequivocal link between smoking and certain forms of cancer.

**Can you clarify the memo's #4A where it says transfer-level prerequisite coursework for calculus is limited to two courses? We're on the quarter system, and we're wondering how that translates to us. For colleges on the quarter system, would it be two courses, or one year (three courses)? Thanks for helping to clarify!**

Yes, two courses in the semester system translates into three courses in the quarter system.

**What will be the standard for validating a two-course prep sequence for calculus (trigonometry and precalculus)?**

In §78213 (f) of AB 1705, there are three criteria for validating preparatory transfer-level courses for the first STEM calculus course:

- (A) The student is highly unlikely to succeed in the first STEM calculus course without the additional transfer-level preparation.
- (B) The enrollment will improve the student's probability of completing the first STEM calculus course.
- (C) The enrollment will improve the student's persistence to and completion of the second calculus course in the STEM program, if a second calculus course is required.

MMAP is currently working on a statewide analysis to identify the academic profile of students who are highly unlikely to succeed in the first STEM calculus course. For the group of students with the lowest level of predicted success, MMAP will also determine the students' probability of completing the first STEM calculus course if they start in a preparatory course, such as trigonometry or precalculus. When the statewide findings are released, colleges will have the option to act in accordance with these findings or replicate the study locally. MMAP will provide instructions and technical assistance to college researchers who want to conduct a local validation study.

**In the December 23, 2022 memo, page 8, section 2(b) under "Required Action for AB 1705 Implementation" references a data template in which each college shall be required to enter data for transfer-level courses prior to Calculus I, and that if that data does not "verify the student's progress is improved" by taking the course preparing them for calculus, the prerequisite may not be continued. Will we have any visibility to or input into this data template? How will data be collected to "verify the benefit of coursework?"**

**Related question: Can you give specific guidance about what data to collect to allow precalculus as a prerequisite for Calculus I?**

AB 1705 sets a deadline of July 1, 2024 for validation of transfer-level prerequisites to STEM Calculus I and specifies explicit criteria in part §78213 (f). The CCCCO is working with MMAP on a statewide validation study using MIS data reported by colleges and high school records available through [Cal-PASS Plus](#). The study will examine transfer-level prerequisites to STEM Calculus I according to the validation criteria in the law. When we release the results, colleges will have the option to act in accordance with the statewide findings or replicate the study locally. MMAP will provide instructions and technical assistance to college researchers who want to conduct a local validation study.

**If a program that requires Calculus III doesn't include Calculus I in the program requirement in order not to exceed the 60 units total, can the college require students to take Calculus I if they haven't taken it yet in high school?**

Is this a hypothetical scenario? The 60-unit constraint applies to ADTs based on Transfer Model Curricula developed through the Course Identification Numbering system (C-ID), and all the calculus-based majors within Transfer Model Curricula list Calculus I as a course requirement. In addition, [c-id.net](#) includes Model Curricula (distinct from Transfer Model Curricula) that fall outside of 60-unit requirements for degrees set by SB 1440/440. The Model Curricula describe heavier unit engineering pathways, all which list Calculus I as a course requirement. Regarding STEM programs, AB 1705 specifically focuses on the first STEM calculus course; therefore, Calculus I is a course that satisfies requirements for a STEM degree.

**The term "gateway course" keeps being used. I would like it explicitly spelled out for me: is the gateway course for STEM considered to be precalculus or first-semester calculus? If it is first-semester calculus, I have a difficult time believing that a student will be successful in [this course] without some previous exposure to trigonometry and some function basics from a precalculus course. Are we being mandated to place students into first-semester calculus who never took something equivalent to precalculus?**

The phrase "gateway transfer-level course" is short-hand for the lowest transfer-level course that satisfies the English or math requirements of a student's intended credit certificate or associate degree, or the course requirement for transfer within their intended major. For STEM majors, the gateway transfer-level course is the first calculus course.

AB 1705 does not mandate a specific placement course or level. Instead, it mandates standards for evaluating the effectiveness of placement policies and prerequisite requirements that bar students from access to gateway transfer-level courses for their program of study. The law also encourages

colleges to develop corequisites and other concurrent supports for calculus as an alternative to transfer-level preparatory courses that are not part of the STEM degree or transfer coursework for the STEM major.

As you note, success in a first STEM calculus course may require previous exposure to trigonometry, or research may show that a full community college trigonometry course prior to calculus deters capable students from progressing into and succeeding in calculus. In which case, colleges may find that trigonometry concepts and skills can be parsed and taught when needed to support calculus learning goals within the context of a corequisite to calculus.

AB 1705 addresses uneven and inequitable access to gateway courses and sets standards for evaluating the impact of prerequisites on students' completion of gateway courses. Currently, access to calculus is uneven and inequitable. Some colleges do not allow any STEM students to start in calculus. For students deemed the most underprepared, colleges require anywhere from six to 16 units of transfer-level coursework prior to Calculus I, and students of color are more likely to be placed into the lowest levels of a college's preparatory sequence. The AB 1705 standards will ensure that capable STEM students are not detoured into prerequisites that hamper their progress, and that all students who aspire to study calculus start in coursework that improves their likelihood of entering and completing it.

**In terms of AB 1705 Section 3F, can you please explain how it makes sense to compare the throughput of students who placed into precalculus with those who placed into calculus? After the multiple measures implementation and course deletions mandated by AB 705, these are now two wildly different populations. One consists of students who took a year of precalculus in high school and possibly Advanced Placement (AP) Calculus. The other consists of students who at best passed intermediate algebra with a grade of D or higher. Basing the possible elimination of precalculus on such a comparison, especially without any additional metrics, seems ill-advised.**

**Related question: In terms of AB 1705 Section 3F, can you please explain how it makes sense to compare the throughput of students who placed into precalculus with those who placed into calculus?**

The deadline for examining the impact of precalculus and similar prerequisites to the first STEM calculus course is July 1, 2024. The CCCCO is working with MMAP to develop statistical models and analyses that will examine the effect of a variety of input variables describing students' academic backgrounds on the output variable of success in calculus. While this research is still under development, MMAP has conducted similar work in the past to develop the default placement rules. They used a combination of decision tree analysis and multiple regression. With decision tree analysis, researchers examined 20+ different variables and identified high school performance characteristics associated with various levels of success for students starting in a given community college course. Using multiple regression, they examined the effect of the model's input variables on success rates to control for possible selection bias. Multiple regression analysis creates sets of statistical "twins", so to speak, and examines the success of statistical twins who start at different levels of coursework. These types of statistical analyses are possible because of the variability in placement policies across colleges.

**Is Calculus I a gateway course for engineering majors? Or is trigonometry the gateway course?**

Calculus I is a gateway course for engineering majors.

**How do we maintain a low-unit support course for students who must enroll directly in calculus if they've never taken anything above Algebra I? Aren't we making STEM less accessible?**

In part §78213 (f) of AB 1705, there are three criteria for validating preparatory transfer-level courses for the first STEM calculus course. The first criterion is that the student is highly unlikely to succeed in the first STEM calculus course without the additional transfer-level preparation. Research may show that students who have not passed a high school course above Algebra I meet this criterion. The second criterion is that the student is more likely to complete calculus if they begin in the transfer-level prerequisite than if they begin directly in calculus. For students who are highly unlikely to succeed in calculus without additional transfer-level preparation, this criterion does not set a very high bar for demonstrating that the prerequisite improves their likelihood of completion.

To the second question, traditional pathways to STEM Calculus I may appear to make STEM accessible to students deemed underprepared, but this belief is not supported by data. A PPIC study found that only 4% of business and STEM students who start in a community college course below transfer-level complete some form of calculus within four terms, compared to only 15% of students starting in college algebra. Can colleges do better if they rethink placement policies and support structures? AB 1705 requires colleges to investigate that question.

**Are we now going to need to justify placing STEM students in precalculus if they never took precalculus in high school? In other words, can we still require students who did not take trigonometry and precalculus in high school to take trigonometry and precalculus at our college before they can take Calculus I?**

Part §78213 (f) of AB 1705 requires colleges to examine the impact of placing and enrolling students into transfer-level course sequences that prepare students for the first STEM calculus course, such as precalculus. In part §78213 (g), the law encourages colleges to develop concurrent support as an alternative to precalculus courses. Will traditional pipelines to calculus prove to be the best strategy for improving calculus completion for students deemed “not calculus ready?” Or will corequisite courses produce higher rates of calculus completion? Currently, pipelines to the first STEM calculus course inclusive of precalculus and trigonometry have high rates of attrition and inequitable outcomes. Any changes made in response to AB 1705 will by definition of the law’s standards produce higher completion rates of calculus.

**For a Math ADT, Calculus I is the first math class that is required in the degree. If a student completed Algebra I in high school, are we saying the student needs to go directly into calculus without any precalculus or trigonometry (even though precalculus is transferable)? Or is it ok to start in precalculus since it's transferable? I need more concrete examples of what is being asked in Provision 2.**

Part §78213 (f) of AB 1705 requires colleges to examine the impact of placing and enrolling students into transfer-level course sequences that prepare students for the first STEM calculus course, such as college algebra, trigonometry, and precalculus. For students pursuing the Associate in Science for Transfer (AS-T) in math, beginning below Calculus I is permitted if research shows that students are highly unlikely to succeed in Calculus I, and they are more likely to complete Calculus I, as well as persist into and

complete Calculus II, if they start in a prerequisite course. In part §78213 (g), the law encourages colleges to develop concurrent support as an alternative to traditional transfer-level preparatory courses. Will traditional pipelines to calculus prove to be the best strategy for improving calculus completion for students deemed “not calculus ready?” Or will corequisite courses be a better strategy for addressing high rates of attrition and inequity that the current system produces? Validation studies will answer these questions. Under AB 1705, a college’s placement policies and curricular structures must ensure that students make progress in the AS-T in math.

## Dual Enrollment

**Regarding high school/dual enrollment students, many use below transfer level or transfer-level prerequisites to satisfy high school requirements. In this circumstance, do colleges need to demonstrate that students who start in that place are highly unlikely to succeed in a transfer-level course without the prerequisite (Exemptions are not carte blanche)? Thanks.**

Currently, dual enrollment students are exempt from the law and do not need to meet the same requirements for completion.

**AB 1705 allows pre-transfer courses for dual enrollment students who haven’t graduated high school. Have you started researching whether this practice should also be reconsidered?**

That question offers a great area to research locally. Currently, dual enrollment students are exempted from the law, as you mention. However, colleges can examine if their dual enrollment students benefit from direct placement into transfer-level coursework if it fits their intended education goal.

## Noncredit Coursework

**Does noncredit English as referenced here include noncredit English as a Second Language (ESL)? We have ESL specific skills classes that are distinct and separate from the ESL academic writing sequence. (Conversation, pronunciation, idioms, citizenship, etc. -- not a replacement for the transfer English or ESL sequence - just extra areas they may want to focus)**

Noncredit English is separate and distinct from noncredit ESL.

**Does AB 1705 apply to students who have enrolled via Noncredit CCCApply?**

AB 1705 applies to any student with an educational goal of certificate, degree, or transfer, and the clock starts when the student enrolls in English, math or credit ESL. If a student applies through noncredit without said goals, the college does not have obligations under AB 1705 to ensure that the student makes progress toward achieving their academic goal. However, as they progress, if they declare an academic goal of certificate, degree, or transfer in a program with English and/or math requirements, then the college now has an obligation under AB 1705 to that student.

## Repeating Coursework Successfully Completed in High School

**How is "successfully completed in high school" being defined? C or better for two semesters? Or are Ds allowed?**

“Successfully completed in high school” is defined as “C or better for two semesters.” Some colleges in the past have accepted a C or better in the second semester as well.

**Please clarify more fully when the college [must] take the highest math a student completed in high school. For example, if a student completed calculus in high school, does the student have to complete it again at community college? In what instance is the college required to take that calculus course as satisfying the requirement? Or doesn't have to accept it?**

**Related question: When you say that students cannot be required to repeat math coursework that they already completed at high school, can you please provide further clarification and specific examples? If a student passed high school Calculus I, does it mean that they cannot be required to repeat Calculus I at college? How will UC and CSU accept this requirement for transfer?**

Please see the AB 1705 implementation guide for a full answer to your question. Regarding calculus, for the purpose of math placement and satisfying prerequisites, a grade of C or better in a full year of high school calculus should give the student access to courses with a Calculus I prerequisite, such as calculus-based introductory engineering or physics courses. However, for the purpose of awarding course credit toward requirements for an associate degree for transfer, colleges may require a student to retake calculus if (1) calculus satisfies a requirement for the certificate, degree, or transfer within a desired major, and (2) the student’s prior learning is not recognized by policies that are in place to award course credit.

For example, consider a student who is seeking an AS-T in math, a degree that requires STEM Calculus I. If the student passed calculus in high school with an A but does not meet the college’s requirements for awarding course credit, such as an AP score at or above 3 on the Calculus AB test, the college can require the student to retake calculus. UC and CSU recognize the purview of community colleges to determine coursework that is equivalent for the purpose of awarding credit.

**Apologize if this has been asked: 1705 requires that we accept high school coursework of the same name as our course (i.e., precalculus), but our faculty have found that the high school course may not cover all of the Course Learning Outcomes in our course, which leaves knowledge gaps in Calculus I. Does this mean we CAN require our precalculus as a prerequisite, or no? (We have a large district that serves several K12 school districts, so [there is] wide variation in course content).**

**Related question: The K12 teachers are not aware of these changes. When I spoke with our feeder schools, the math instructors did not feel that the high school precalculus course was equivalent to the college precalculus course. If all topics are not covered in the high school objectives, how can we say this is a repeated course in the college?**

Please see the AB 1705 implementation guide for a full answer to your question. With regards to the given precalculus scenario, colleges cannot require a student to repeat a full precalculus course for the purpose of placement or satisfying prerequisites. Knowledge gaps in precalculus content can be addressed in a corequisite course to calculus.

## **Does the law require colleges to establish high school course articulation agreements?**

No, the law does not require colleges to establish high school course articulation agreements.

In the description of multiple measures placement, the law says, “the multiple measures placement shall not require students to repeat coursework that they successfully completed in high school or college or for which they demonstrated competency through other methods of credit for prior learning.” Therefore, for the purpose of placement and clearance of prerequisites, colleges shall use students’ self-reported course-taking as required by the law in part §78213(c)(6), and again in (h)(3), without articulation of high school courses. However, corequisite support linked to the appropriate transfer-level course for the student’s program of study can be required for students in the lowest bands of high school GPA or for whom prior course-taking does not satisfy prerequisites for the gateway transfer-level course within the student’s program of study.

Colleges may choose to develop articulation agreements with local high schools related to awarding course credit toward course requirements for the degree, but this action is not required. Colleges can rely on current local policies and processes, such as AP scores, for establishing course credit toward course requirements for the degree. That said, alignment of curriculum with K12 is always a worthwhile investment, particularly when done to establish clear pathways to degree and career for students. Colleges are encouraged to apply the guided pathways framework to use this as an opportunity to better align K12 and community college curriculum and course requirements. Starting the conversation from a position of respecting the pedagogical and curricular efforts of fellow educators as the expectation can have strong positive effects on the intersegmental relationship, encourage cooperation and collaboration, and potentially yield better student preparation and additional course-taking in the relevant disciplines.

## **Will the Title 5 math competency be changed to allow high school math with a C or higher to meet associate degree requirements that are not transfer track (i.e., like a degree in welding)?**

Satisfactory completion of a mathematics course at or above the level of intermediate algebra satisfies the math competency for the associate degree. Because students cannot be required to repeat coursework they successfully completed in high school under AB 1705, a grade of C or better in a math course at or above the level of high school Algebra 2 satisfies the math competency for the certificate or associate degree. Regulation must follow law.

## **C-ID states trigonometry is a prerequisite for precalculus. What does trigonometry look like at the high school level?**

Trigonometry is usually part of a high school precalculus course.

## **How do we appropriately measure equivalency of a high school math class with one at the college — just by the title of the class or by content? Is there standardized guidance across the state?**



**Related question: How is "repeat coursework" from high school defined when the courses are typically not the same? (Ex., integrated math is not taught at most community colleges).**

The AB 1705 mandate that colleges cannot require students to repeat coursework that they have successfully completed in high school applies to placement, prerequisites, and the math competency for the local associate degree. For placement and prerequisites, colleges shall honor a student's self-reported information about high school course taking and grades as stipulated in part §78213 (c)(6) and does not require a course equivalency process.

For example, students who report a C or better in Integrated Math 3 meet the intermediate algebra prerequisite for math and science courses. In such cases, the college can offer the option of corequisite support for those transfer-level courses to address gaps. However, if the college plans to award course credit toward requirements for the student's degree, the college can use existing processes for determining when course credit is awarded. There is no standardized process or guidance for how colleges determine equivalency of prior coursework. For more information, please review the AB 1705 implementation guide.

**Does "repeat" of high school coursework include statistics and Calculus I?**

Colleges can use existing processes to award course credit toward requirements for the student's associate degree. For example, consider a student who is seeking an AS-T in psychology, a degree that requires statistics. If the student passed statistics in high school with an A but does not meet the college's requirements for awarding course credit, such as an AP Statistics score at or above 3, the college can require the student to retake statistics. Please see the AB 1705 implementation guide for more extensive guidance on this topic.

**So, if a student passes an AP course in K12, but doesn't take or pass the AP exam, the college is still supposed to award them college credit?**

**Related question: What about students who take AP Calculus and pass the class, but do not pass the AP test? They do not get credit for this class at the transfer institutions if they do not have Calculus on their college transcript.**

Colleges can use existing processes to award course credit toward requirements for the student's associate degree. For example, consider a student who is seeking an AS-T in math, a degree that requires Calculus I. If the student passed calculus in high school with an A but does not meet the college's requirements for awarding course credit, such as an AP score at or above 3 on the Calculus AB test, the college can require the student to retake calculus. Please see the AB 1705 implementation guide for more extensive guidance on this topic.

**How can a student be successful in calculus without repeating Algebra II, even if they already successfully took it in high school and were placed there by previous placement processes?**

Based on the evidence, the mechanism that placed students back into intermediate algebra was substantially misguided and not supported by the actual evidence of that student's capacity. It also misunderstands meaningfully the evidence of the impact of forcing students to repeat courses they

have successfully completed (which, broadly for students across all levels of preparation, has a negative impact on their grades in the next course)

## Articulation and Math Prerequisites

### **What do we do about non-math science or economics courses that have below-transfer math courses as prerequisites required for C-ID approval?**

**Similar question: What about those courses that require a prerequisite for articulation, such as C-ID ECON 201 or 202 with a stated prerequisite of Elementary Algebra? Or other science courses that require intermediate algebra as a prerequisite for UC articulation?**

As of fall 2022, 57 California community colleges offered only transfer-level math courses, and all these colleges retained C-ID approval for science and economics courses with math prerequisites below the transfer level, as well as articulation status. These colleges used one of the following mechanisms for determining a student's eligibility for the science or economics course: (1) self-reported high school coursework; (2) completion of corequisite coursework; (3) multiple measures placement into, or completion of, a course with the same or higher prerequisite. These mechanisms are cited in part §78212.5 of AB 1705. Also, there have been recent changes to C-ID descriptors for some of these courses. For example, all chemistry courses with C-ID descriptors that include below-transfer math prerequisites now say, "or eligibility for higher level math." The CCCCCO, CSU Chancellor's Office (CSUCO), and UC Office of the President (UCOP) are aligned in their understanding of AB 705 and AB 1705, and there is general agreement that community colleges have purview over determining how prerequisites are satisfied in accordance with recent legislation.

### **How does AB 1705 placement affect compliance with C-ID?**

**Related question: Are the C-ID descriptors going to be updated?**

These questions may be referring to prerequisites. AB 1705 placement should not affect compliance with C-ID because community colleges have purview over how prerequisites are satisfied.

As of fall 2022, over half of California's community colleges discontinued all pre-transfer math and maintained C-ID certification for courses with pre-transfer math prerequisites. Colleges have used the following mechanisms to address this issue: (1) clear prerequisites using high school coursework; (2) concurrent enrollment in low unit or noncredit corequisites to clear the prerequisite; (3) augment prerequisites to include eligibility for or completion of a higher level course, e.g., "precalculus or higher or eligibility for calculus;" or (4) revised program maps that ensure students complete the higher level math course prior to enrolling in a science or engineering course that has the math prerequisite. Use of these mechanisms should not interfere with C-ID certification.

The CCCCCO will work with the ASCCC to ensure any needed updates are made.

### **Another college in our district has a college algebra course with support on the books while we don't. Any solution/remedy for this?**

AB 1705 does not require a college to implement a corequisite for a particular course or for colleges within a district to align their course offerings; however, doing so may be of benefit to your students.

**Some courses require prerequisites for transfer. How are you allowing for this in terms of math, such as Calculus I.**

**Related question: Are CSUs and UCs automatically going to approve the articulation we already have when we change the prerequisites?**

**Related question: Are there concerns about articulation to UCs as calculus has a precalculus prerequisite on C-ID.**

**Related question: How do you recommend we satisfy the requirement from UC that intermediate algebra must be a prerequisite to certain math and science courses (such as chemistry or physics)?**

Part §78212.5 (c) of AB 1705 deals with prerequisites and gives mechanisms by which community colleges can establish a student's eligibility for transfer-level courses, which include (1) self-reported high school coursework; (2) completion of corequisite coursework; (3) multiple measures placement into, or completion of, a course with the same or higher prerequisite. After the passage of AB 705, UC and CSU continued to require a prerequisite as part of a course outline, but the prerequisite does not need to be a course. In a [2020 training](#), UCOP staff described prerequisites as necessary for articulation but also said that a prerequisite of "multiple measures placement" was sufficient. Corequisites are also allowed.

The CCCC, CSUCO, and UCOP are aligned in their understanding of AB 705 and AB 1705, and there is general agreement that community colleges have purview over determining how prerequisites are satisfied in accordance with recent legislation.

**Will transfer institutions finally remove the requirement for intermediate algebra on most transfer-level math classes? Many colleges have that listed as a requirement still for articulation purposes. We get around it with a provision for "placement by multiple measures," but it is a nightmare to recode everything on the back end.**

It may take a while for the three systems to clean up issues like this. UCOP and CSU still require something in the prerequisite line; you cannot leave this blank, but it does not need to be a course. For example, they are accepting "multiple measures placement" as a prerequisite. AB 705 and AB 1705 have required a lot of recoding work on the back end. Thank you to all who have been involved! This work has helped tens of thousands of students make progress toward their academic goals.

## English as a Second Language (ESL)

### How has AB 705 impacted ESL students?

ESL is distinct from remediation in English, and additional research was needed to determine the best strategies for this population of students. Students enrolled in ESL credit coursework are foreign language learners who require additional language training in English, require support to successfully complete degree and transfer requirements in English, or require both of the above.

Therefore, AB 705 established a separate standard for these students: maximizing the probability that a student enrolled in ESL will enter and complete degree and transfer requirements in English within three years versus the one-year timeline for non-ESL students.

Following the passage of AB 705, the CCCC established an ESL Implementation Subcommittee and established a separate implementation timeline. For more information on this, see page 8 of this CCCC document for a summary of the system's current work on ESL.

Since then, MMAP found that ESL students who were high school graduates and placed directly into transfer-level English have high throughput rates (successful completion after one year) with corequisite supports when needed. For additional information, see [Maximizing English Language Learners' Completion of Transferable English Composition in Community College](#) and the [Curricular Options for Supporting English Learners in College Composition](#) webinar from the California Acceleration Project.

### **Can you also address credit ESL? Can high school graduates be placed in below transfer-level ESL? Or opt into it voluntarily?**

High school graduates should be placed directly into the English pathway or advised of their right to do so. They may choose to enroll in an ESL course. If they enroll in an ESL course, they will be held to the three-year timeline that applies to ESL completion.

### **Can guided self-placement be used for ESL?**

Yes.

### **What about high school data that is outside of the United States for ESL students?**

Whether to recognize high school transcript data from other countries is a college-by-college decision. Many colleges do accept such data from students for placement.

### **When will there be a validation process for locally created ESL guided self-placement (GSP) tools?**

That decision has yet to be determined and will not be settled in 2023. Our first task is to design a validation process for ESL AB 705 implementation. That work will commence in spring 2023, and we will aim to have a template and process by fall 2023 for spring 2024 submission. We will need to learn from those submissions and additional research to determine next steps for GSP validation.

## **Common Course Numbering**

**We are hearing that AB 1111 will mean lower-unit English and math classes for many of us as course units are standardized along with course numbers and titles. How will this change intersect with the goals of AB 1705 to increase support for English and math? For instance, if English 100 is 3 units, will we have a standardized corequisite to pair with it as a support option?**

The work on common course numbering (CCN) is so nascent, it is premature to state how CCN will be implemented or what it will mean for remedial education reform. The CCN Taskforce is still in the early stages of discussion and no decisions have been made.

## Failed Attempts of Transfer Level

### Are more students failing classes at California's community colleges?

It is true that – among students who begin in a transfer-level course – pass rates have declined somewhat statewide. However, context is important here.

Pre-AB 705, most students who began in remedial classes were lost to attrition without ever enrolling in a transfer-level class. The large-scale failures of our prior system are invisible when we focus only on pass rates in transfer-level classes.

Before AB 705, pass rates were artificially inflated by colleges' incredibly restrictive access to transfer-level courses. To illustrate this: if enrollment in precalculus is restricted to students who have already passed Calculus I, the pass rate will likely be strong. With nearly universal access to transfer-level courses, some declines in pass rates are to be expected.

When we look at all English and math students, we see that completion of transfer-level courses increased from 49% to 67% in English and from 26% to 50% in math. Statewide, more than 41,000 additional students completed transfer-level English in the first year of AB 705 than a few years earlier, and more than 30,000 additional students completed transfer-level math (2015-2016 vs 2019-2020). For more information, visit the CCCCO's [Transfer-Level Gateway Completion Dashboard](#).

If colleges are seeing pass rates drop at the transfer level, we should work to improve them through professional development for faculty and additional supports for students. Corequisite models – which provide students extra support while they are taking transfer-level classes – have been shown to produce higher completion for all students and more equitable outcomes for Black and Latina/o/x students. Colleges should focus on expanding and strengthening these practices, rather than returning to the ineffective practices of the past.

### If a student is unable to pass the transfer-level math course after three attempts, then what?

Colleges should have early alert systems in place that activate wrap-around supports for students who are failing a course while the student is still enrolled in the course. Similarly, colleges should have mechanisms in place to proactively support students who have failed a gateway transfer-level math course that they are attempting for a second time. Supports can include addressing basic needs, tutoring, mentoring, or enrolling in concurrent support.

In the case of general education requirements, colleges should provide a multitude of transfer-level options for students, such as liberal arts math, statistics in multiple departments, or other courses in disciplines that met Intersegmental General Education Transfer Curriculum (IGETC) requirements for a “focus on quantitative analysis and the ability to use and criticize quantitative arguments,” such as El Camino's COMS 180 Data-Driven Persuasion. By providing quantitative reasoning options, students who may struggle in one course can attempt a different course.

## Guided Self-Placement

**Are colleges allowed to require students to go into the tiers (straight 101 course or 101 with a corequisite) that they place in according to the self-guided placement (HS GPA) if we have a process for students to challenge that placement?**

Yes, assuming that the straight 101 course referenced is at the transfer level and other requirements of the law are met.

**Can you please expand or revisit the "Changes to Placement Including Guided Placement or Self-Placement," #4: "Guided placement or self-placement shall not result in placement or enrollments into...transfer-level coursework that does not satisfy requirements for the student's program of study"?**

AB 1705 clarifies that guided placement or self-placement should result in a placement and enrollment that maximizes the probability that students enter and complete transfer-level mathematics and English coursework that satisfies a requirement of the intended certificate or associate degree or a requirement for transfer within the intended major, within a one-year timeframe of their initial attempt in the discipline. This guidance means that when the student chooses to enroll in English or math/quantitative reasoning, they enroll according to their placement. This approach ensures that the student has the best chance of completing transfer-level coursework that satisfies requirements for their program of study.

## Additional Resources

- [AB 1705 Webinar Recording](#)
- [AB 1705 Webinar Presentation](#)