

# BC Response to CCCO's AB 1705 STEM Calculus Validation Guidelines

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## Summary of CCCO's BC Analysis

For the cohorts of STEM Majors analyzed in this report, we offer the following observations. Observations based on an analysis of ALL students who start in preparatory courses in the STEM Calculus

pathway, rather than the subset of STEM majors, may differ.

- Lowest STEM Placement students who started in STEM Calculus 1 at your college were not “highly unlikely to succeed.” (STEM Calculus 1 completion is greater than 15%.)
- Lowest STEM Placement students who started in any preparatory course in the STEM Calculus Pathway at your college had lower STEM Calculus 1 completion (throughput) in two years than those who started in STEM Calculus 1.
- Less than 50% of Lowest STEM Placement students who started in any preparatory course completed STEM Calculus 1 in two years.
- Students in the higher placement group who started in a preparatory course prior to STEM Calculus 1 were repeating coursework that they previously passed in high school, which is no longer permitted under AB 1705.
- The data provided in this report do not provide evidence that placement and enrollment practices for the STEM Calculus pathway at your college meet AB 1705 standards. Based on this analysis, this report does not support validation approval status or interim approval status for any preparatory course currently offered by your college in the STEM Calculus pathway.

## Definitions

“Highly Unlikely to Succeed” is defined as having a throughput rate of at most 15%.

**Lowest STEM Placement Group:** High School GPA  $\leq$  2.6 OR not previously earned a C or better in high school trigonometry, precalculus, or calculus.

### Size of Lowest Placement Group from 2019-2020, 2020-2021, Fall 2021:

Math B1A/L: 186

Math B1B: 26

Math B6A: 44

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**Total: 256**

## Options available to BC:

**Option A (STEM Calculus I Implementation):** Colleges choosing this option are meeting AB 1705 standards by replacing stand-alone preparatory courses with support-enhanced STEM Calculus 1 or linked corequisite support if no more than two additional units by July 1, 2025. If the college continues to offer stand-alone preparatory courses, enrollment will be proactively restricted to student populations described in §78213 (j). These colleges will still complete the certification form, but no data submission is required.

**BC Status:** In Compliance since Math B99NC is linked as support to Math B6A. The Department is also going to explore corequisite options.

**Option D (Implement an Innovative Course):** Colleges choosing this option are planning to enact the STEM Calculus Pathway Placement rules with the innovative preparatory course option for Lowest STEM Placement students. An innovative preparatory course is no more than 4-units with no more than 2-units of concurrent support. This course will be offered during the two-year innovation period (Fall 2025 – Spring 2027). An innovative course will undergo additional validation by July 1, 2027, and must achieve full validation status in order to continue as a placement and enrollment option beyond July 1, 2027 (i.e., the course will need to meet all three standards described in in §78213 (f)(1)). No data submission is required.

**BC Consideration:** We would need to write such a course and it would be available to approximately 40 students per semester. The CCCO's throughput metric makes validation highly improbable.

### **Math Department's Recommendation:**

The math department recommends **Option A**.

## AB 1705 References

**§78213 (j)** The following are exceptions to transfer-level placement and enrollment into mathematics and English coursework, as described in subdivision (i):

- (1) Students who have not graduated from a United States high school or been issued a high school equivalency certificate.
- (2) Students enrolled in a certificate program without English or mathematics requirements.
- (3) Students enrolled in a noncredit ESL course who have not graduated from a United States high school or been issued a high school equivalency certificate.
- (4) Students with documented disabilities in educational assistance classes, as described in Section 56028 of Title 5 of the California Code of Regulations, who are otherwise not able to benefit from general college classes even with appropriate academic adjustments, auxiliary aids, and services.
- (5) Students enrolled in adult education programs who have not graduated from a United States high school or been issued a high school equivalency certificate.
- (6) Students enrolled in adult education programs who are enrolled in coursework other than mathematics or English.
- (7) Current high school students in dual enrollment or taking courses not available in their local high school.
- (8) The community college has provided local research and data pursuant to subdivisions (e) and (f) to verify the benefit of the placement and enrollment into transfer-level coursework that does not satisfy a requirement for the intended certificate or associate degree or a requirement for transfer within the intended major.
- (9) College-level placement and enrollment in lieu of transfer-level placement and enrollment may occur for:
  - (A) Students in career technical programs seeking a certificate or associate degree with specific requirements, as dictated by the program's advisory or accrediting body, that cannot be satisfied with transfer-level coursework
  - (B) Specific subgroups of students for whom a community college district or community college has provided local research and data meeting the evidence standards pursuant to subdivisions (e) and (f) that allow for the placement and enrollment of the student subgroup into pretransfer-level mathematics or English coursework.

**§78213 (f)(1)** By July 1, 2024, for calculus-based associate degrees or transfer majors in science, technology, engineering, and mathematics (STEM), community colleges shall examine the impact of placing and enrolling students into transfer-level course sequences, composed of no more than two transfer-level courses, that prepare students for the first STEM calculus course, in order to verify the benefit of the coursework to students by showing all of the following:

- (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.