

# AB1705 Advocacy Efforts

#### HSI Equity, Excellence, & Exito Curriculum Workgroup

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#### Legislative Faculty & Student Advocates:

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### Current Transfer Level Math Pathways

#### **Biology pathway**:

Math 116 (College & Matrix Algebra) -> Math 121 (Bio/Business-Calculus)

#### **Engineering Pathway:**

Math 104 (Trig) -> Math 141 (Pre-Calc) -> Math 150 (Calculus) -> Calc Based Physics (195 Sequence) -> ENGE sequence



# AB1705 Legislation

(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.

(2) If the benefit of the coursework, as described in paragraph (1), is not verified, the college shall not recommend or require students to enroll in that course after July 1, 2025, and shall notify students who continue to enroll in the course that it is optional and does not improve their chances of completing calculus for their STEM program.



### 1705 Math Pathways

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- Note: High Schools, CSUs, and UCs all offer these courses but it would be illegal for community colleges to offer them

## **RP** Group Data



- RP was hired by the State Chancellor's office to study the success of students in Calculus.
- The completed study is very flawed.
- Only included students whose HS math courses were known, either by transcript or selfreporting
  - Average student age: 21
  - Average time since HS math: 1 year
- Their conclusion: students without trigonometry or pre-calculus are still highly likely to succeed if they enroll directly into calculus (by throughput)
- Huge sample bias: they counted students who petitioned into or tested into calculus as if they had no previous knowledge
- Prereq knowledge could be from: the military, college classes at schools (non-CA CCs)schools, non-report HS class, etc
- RP was aware of this bias: discussed extensively, and tried to correct for, in a 2018 study on pre-calculus
- In December, the state chancellor's office admitted the data was "not there".

# Chancellor's Memo 2023

-Option A: STEM Calculus 1 Implementation; everyone into Calculus

-Option B: Apply for Validation Approval; must meet the three standards

-Option C: Interim Approval; 50% throughput or greater for preparatory course

-Option D: Innovative Course; new prep course and needs further validation

\*\*actively restrict enrollment

STEM Calculus Pathway Placement	Placement and Enrollment in the STEM Calculus Pathway for STEM Students in Majors that Require STEM Calculus 1
For All Students	<ul> <li>By July 1, 2025, all students pursuing STEM programs <i>must be given access to STEM calculus</i> (with or without concurrent support). Students cannot be denied access to STEM Calculus 1 after July 1, 2025, unless the college has full validation status, as defined below.</li> <li>As of July 1, 2025, concurrent support in the form of a corequisite or an enhanced STEM Calculus 1 course, of no more than two additional units, <i>must be available as an option</i> but can only be required for Lowest Placement students (defined below).</li> </ul>
Higher STEM Placement HS GPA > 2.6 AND	At all colleges, the placement and initial enrollment for STEM students in the higher STEM placement band is STEM Calculus 1.
Passed high school Trigonometry, Precalculus, or Calculus with a C or better	Low unit (2 or fewer units) corequisite course or enhancement to STEM Calculus 1 may be recommended to students but not required.
Lowest STEM Placement HS GPA <= 2.6 OR Did not pass high school Trigonometry, Precalculus, or Calculus with a C or better	<ul> <li>At all colleges, except those with full validation status, students in the Lowest STEM placement band must be given the option to begin in one of the following: <ol> <li>STEM Calculus 1</li> <li>STEM Calculus 1 with 2 or fewer units of attached support</li> <li>An optional preparatory course with interim approval (Option C below) or an innovative preparatory course (see Option D below), but not both.</li> </ol> </li> </ul>
	At colleges with full validation status, students in the Lowest STEM placement band can be placed and enrolled into the validated preparatory course(s)

# Impact of AB 1705 on the Sciences



- Fluency in math areas is critical to success in science courses.
- Curriculum Work Group identified 5 key areas in math essential for the sciences courses.
  - Algebra, Log/Ln, Graphing, Trigonometry, Vectors
- The above topics are in taught in algebra, trigonometry, and precalculus
- Calculus is an essential tool for engineering & physics classes & upper division courses in chemistry





# Faculty Advocacy

- San Diego Mesa College Committee of Chairs (Nov. 2023)
- Board of Trustees (Dec. 2023)

Addressed the negative impacts of AB 1705 on STEM Education. Video of this address was widely distributed across the local and State region.



- Mesa College ASG Student Resolution opposing AB 1705 at is distributed to other ASG leaders in region.
- HSI E-3 members collaborated with Los Angeles Community College District faculty, students, and union advocates
- HSI E-3 members collaborated with Faculty Association of California Community Colleges (FACCC)



### Math Department Work

Mesa Math Department workload increases with ever-changing curriculum within the math department.

Math Chairs work closely with STEM chairs in physical sciences, chemistry, and biology to form a strong interdisciplinary cohort. Notable: meeting with Aisha Lowe (former State Level Vice Chancellor) to address the flawed study.

Mesa Math Chairs have taken leadership roles within the district uniting all three departments at SDCCD.

- Extensive meeting with Chancellor Gregory Smith
- Frequent meetings with Vice Chancellor Susan Topham & Dean Shelly Hess
- Meetings with UC San Diego Mathematics Department (Juan/Irena, Physical Sciences Chair)
- Communications with CSU Math Council who wrote a resolution against AB 1705
- Data requests to Mesa College IE to collect meaningful data

# Legislative Advocacy

Fall-Spring 2024 Met with Assemblyman Christopher Ward, Assm. Alvarez, Assm. Muratsuchi, & Assemblywoman Tasha Boerner.

-Legislators were not aware on the full impact of the legislation.

-Confusion on difference between transfer level courses vs. remedial course

-Open to further fact gathering, investigation, and discussion.

-Emphasis placed on protecting two course sequence of pre-calculus/trigonometry





## Advocacy: Board of Governors

In Spring 2024, 20 STEM faculty members sent written statements to Board of Governors opposing AB 1705.

In Fall 2024, Board of Governors, Riverside CA



Notable points:

- Many at the State Chancellor's Office were unaware of scope of impact. Don't know math pathways.
- Juan Bernal's speech regarding the impact on Latinx students touched a visibly affected State Chancellor Sonya Christian.
- A few days later we were contacted by Assemblyman Christopher Ward's office and then met with his Sacramento people to discuss amendments to legislation.

### December 2024 State Chancellor's Office Memo

STEM Calculus Pathway	Placement and Enrollment in the STEM Calculus Pathway for STEM
Placement	Students in Majors that Require STEM Calculus 1
Student successfully completed or demonstrated through CPL: Integrated Math 4, Trigonometry, Precalculus, or equivalent	By July 1, 2025, students pursuing STEM programs <b>must be given access to</b> <b>STEM calculus</b> (with or without concurrent support). Students cannot be denied access to STEM Calculus 1 after July 1, 2025.
Student successfully completed or demonstrated through CPL: Integrated Math 3 or Intermediate Algebra or equivalent	The college may enroll the student in a one semester course prior to Calculus (typically Pre-Calculus) or in Calculus, with or without concurrent support. If such students begin in a prior to Calculus course and successfully complete it, their next course is STEM Calculus 1. Enrollment in the course prior to Calculus should be restricted to students who have not successfully completed Integrated Math 4, Trigonometry, Precalculus, or equivalent.
Student did not successfully	The college may enroll the student in a two-semester sequence at transfer-
complete or demonstrate	level prior to Calculus, with or without concurrent support. Enrollment in the
through CPL:	first course in the two-semesters prior to Calculus should be restricted to
Intermediate Algebra,	students who have not successfully completed Intermediate Algebra,
Integrated Math 3 or equivalent	Integrated Math 3 or equivalent.

## Advocacy Board of Governors



Attended Board of Governors Meeting-January 2025.

Southwestern College Mathematics Chair Karen Cliffe addressed the BOG in person in Sacramento.

Faculty, students, MESA Directors, and Puente directors from the *entire state of California* flooded Zoom to support the memo.

Everyone was asked to support or not support the Dec. 2024 Memo.

There is overwhelming support to protect the two course sequence in precalculus/trigonometry!

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### Flow Chart



