



**FOOTHILL  
COLLEGE**

# Math AB 1705 Update

Mathematics Dept. Presentation  
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# AB 1705 Brief Review

- Similar to AB 705 promoting access to transfer-level coursework, AB 1705 aims to promote access to English and math courses required for AA degrees.
- When students require calculus for their degree (STEM majors), colleges must enroll those students directly into calculus, or else colleges must demonstrate the benefit of enrolling those students in precalculus first.
- Precalculus courses achieve validation when:
  - 1) The student is “highly unlikely” to succeed in calculus without taking precalculus first

~ AND ~

  - 2) Taking precalculus increases the odds that the student will persist to and succeed in calculus.



# RP Group Validation Findings for Foothill: Feb 2024

- 1) Lowest placement group of STEM majors (HS GPA  $\leq$  2.6 OR had not passed trig, precalc, or calc) were **not** “highly unlikely” to succeed if they were placed directly into MATH 1A.
  - Found that 62% completed MATH 1A within 2 years if they began in MATH 1A.
  
- 2) Lowest placement group of STEM majors who began with MATH 48A, 48B, or 48C were **less likely** to complete MATH 1A within 2 years than those who began directly in MATH 1A.

# Options for Foothill: Feb 2024

- Option A: No longer offer precalculus to STEM majors.
- Option B: Demonstrate that Foothill's precalculus sequence maximizes throughput to MATH 1A for STEM majors. (It does not.)
- Option C: Keep MATH 48C and show that it meets the standards by July 1 2027.
- Option D: Create a new innovative precalculus course and show that it meets the standards by July 1 2027.

**MATH DEPT. DECISION: Option D**

**Create MATH 47**

Notes: MATH 48C could be kept for a continued trial period under Option C because slightly more than 50% of students who began with MATH 48C passed MATH 1A within two years. MATH 47 is a new precalculus course called "Path to Calculus," currently expected to be offered for the first time in Fall 2025.

# Updates to CCCCCO Guidance

## December 2024 Memo

High School Coursework Passed	New Placement
Integrated Math 4, trigonometry, or precalculus	MATH 1A Can be required to take a corequisite
Integrated Math 3 or intermediate algebra	Up to 2 quarters of precalculus (e.g., MATH 47 or MATH 48B/C)
Below Integrated Math 3 or intermediate algebra	Up to 3 quarters of precalculus (e.g., MATH 47 or MATH 48A/B/C)

Whatever precalculus we offer will still undergo validation and must meet AB 1705 standards by July 1, 2027

# Distribution of New Placements

STEM majors are in all placement levels

Placement	HS GPA	STEM major <i>n</i> = 1707	Not STEM but attempted Math 48ABC <i>n</i> = 283
Highest placement (trig, precalc, or calc)	Over 2.6	51%	27%
	2.6 or lower	0%	0%
Middle placement (int. algebra)	Over 2.6	11%	27%
	2.6 or lower	5%	14%
Lowest placement (no int. algebra)	Over 2.6	7%	13%
	2.6 or lower	4%	8%
Unknown placement	Over 2.6	3%	4%
	2.6 or lower	1%	1%
	Unknown GPA	18%	6%
<b>TOTAL</b>		<b>100%</b>	<b>100%</b>

Notes: Students who enrolled in at least one for-credit course between Fall '23-Spring '24 and had not enrolled in the math STEM sequence prior to Fall '23. High school students and adult learners excluded. STEM major = major requiring MATH 1A or 1B for the degree, and/or having attempted MATH 22. List of STEM majors: Biochemistry AS, Biology AS-T, Chemistry AS, Computer Science AS and AS-T, Engineering AS, Math AS, Math AS-T, Physics AS, Physics AS-T.

# STEM Majors: New Placements by Ethnicity

Black and Latinx STEM majors are most likely to receive the lowest placement

Ethnicity	Highest Placement	Middle Placement	Lowest Placement	TOTAL
Asian	72%	20%	8%	100%
Black	41%	37%	22%	100%
Filipinx	59%	36%	6%	100%
Latinx	40%	33%	27%	100%
Native American	<i>n</i> <10	<i>n</i> <10	<i>n</i> <10	n/a
Pacific Islander	54%	46%	0%	100%
White	67%	19%	14%	100%
Decline to State	82%	4%	14%	100%

Notes: STEM majors who enrolled in at least one for-credit course between Fall '23-Spring '24 and had not enrolled in the math STEM sequence prior to Fall '23. High school students, adult learners, and students with unknown placement excluded. Native American students not reported due to count less than 10. STEM major = major requiring MATH 1A or 1B for the degree, and/or having attempted MATH 22. List of STEM majors: Biochemistry AS, Biology AS-T, Chemistry AS, Computer Science AS and AS-T, Engineering AS, Math AS, Math AS-T, Physics AS, Physics AS-T. Totals may not add to 100 due to rounding.

# STEM Majors: New Placements by Gender

There are no strong differences in placement by gender

Gender	Highest Placement	Middle Placement	Lowest Placement	TOTAL
Female	59%	25%	16%	100%
Male	59%	26%	15%	100%
Unknown	76%	10%	14%	100%

Notes: STEM majors who enrolled in at least one for-credit course between Fall '23-Spring '24 and had not enrolled in the math STEM sequence prior to Fall '23. High school students, adult learners, and students with unknown placement excluded. STEM major = major requiring MATH 1A or 1B for the degree, and/or having attempted MATH 22. List of STEM majors: Biochemistry AS, Biology AS-T, Chemistry AS, Computer Science AS and AS-T, Engineering AS, Math AS, Math AS-T, Physics AS, Physics AS-T. Totals may not add to 100 due to rounding.



# STEM Majors: New Placements by Low Income

Low income students are more likely to receive the lowest placement

Low Income	Highest Placement	Middle Placement	Lowest Placement	TOTAL
Yes	46%	30%	24%	100%
No	67%	22%	11%	100%

Notes: STEM majors who enrolled in at least one for-credit course between Fall '23-Spring '24 and had not enrolled in the math STEM sequence prior to Fall '23. High school students, adult learners, and students with unknown placement excluded. STEM major = major requiring MATH 1A or 1B for the degree, and/or having attempted MATH 22. List of STEM majors: Biochemistry AS, Biology AS-T, Chemistry AS, Computer Science AS and AS-T, Engineering AS, Math AS, Math AS-T, Physics AS, Physics AS-T. Totals may not add to 100 due to rounding.

# STEM Majors: New Placements by First Generation

First generation students are more likely to receive the lowest placement

First Generation	Highest Placement	Middle Placement	Lowest Placement	TOTAL
Yes	45%	30%	25%	100%
No	65%	23%	12%	100%
Unknown	40%	29%	31%	100%

Notes: STEM majors who enrolled in at least one for-credit course between Fall '23-Spring '24 and had not enrolled in the math STEM sequence prior to Fall '23. High school students, adult learners, and students with unknown placement excluded. STEM major = major requiring MATH 1A or 1B for the degree, and/or having attempted MATH 22. List of STEM majors: Biochemistry AS, Biology AS-T, Chemistry AS, Computer Science AS and AS-T, Engineering AS, Math AS, Math AS-T, Physics AS, Physics AS-T. Totals may not add to 100 due to rounding.

# STEM Majors: New Placements by MESA

**MESA (Mathematics, Engineering, and Science Achievement) students are less likely to receive the highest placement and more likely to receive the middle placement**

MESA	Highest Placement	Middle Placement	Lowest Placement	TOTAL
Yes	50%	32%	18%	100%
No	60%	25%	16%	100%

Notes: MESA is a state-funded program that supports students from underrepresented groups to succeed in STEM. STEM majors who enrolled in at least one for-credit course between Fall '23-Spring '24 and had not enrolled in the math STEM sequence prior to Fall '23. High school students, adult learners, and students with unknown placement excluded. STEM major = major requiring MATH 1A or 1B for the degree, and/or having attempted MATH 22. List of STEM majors: Biochemistry AS, Biology AS-T, Chemistry AS, Computer Science AS and AS-T, Engineering AS, Math AS, Math AS-T, Physics AS, Physics AS-T. Totals may not add to 100 due to rounding.

# STEM Majors: Throughput to MATH 1A by New Placements

Students are more likely to achieve throughput to MATH 1A and pass MATH 1B if they begin in MATH 1A as opposed to Math 48A, B, or C.

Placement	First STEM Sequence Course	Achieved Throughput to MATH 1A	Passed MATH 1B
Middle placement (intermediate algebra)	MATH 48A	24%	20%
	MATH 48B	29%	21%
	MATH 48C	48%	26%
	MATH 1A	76%	50%
Lowest placement (no intermediate algebra)	MATH 48A	20%	18%
	MATH 48B	<i>n</i> <10	<i>n</i> <10
	MATH 48C	<i>n</i> <10	<i>n</i> <10
	MATH 1A	74%	74%

Notes: STEM majors who began math with the STEM math sequence (48ABC or 1A) between Summer '19 – Fall '22. Throughput is defined as completing MATH 1A within 2 years of beginning the STEM math sequence. Passed MATH 1B is defined as passing by Fall '24. Percents for groups fewer than 10 not reported. List of STEM majors: Biochemistry AS, Biology AS-T, Chemistry AS, Computer Science AS and AS-T, Engineering AS, Math AS, Math AS-T, Physics AS, Physics AS-T.



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# Questions?