California Community Colleges

Multiple Measures Assessment Project
The RP Group

Research Highlight

Why Students Choose Not to Take STEM Calculus 1

November 2026

Introduction

This Research Highlight summarizes why Science, Technology, Engineering, and Math (STEM) majors attending California community colleges choose not to enroll in Calculus 1. According to a statewide survey of STEM majors and STEM Calculus 1 students conducted by The RP Group's Multiple Measures Assessment Project in fall 2025 (see sidebar), **over one-third of respondents (*n* = 725) indicated they had not taken STEM Calculus 1 at any of the state's community colleges.**

Math departments, STEM discipline faculty, and advising professionals can use these findings to understand what shapes STEM students' decisions about calculus and to guide the information and support that help ensure students who need the course enroll in and complete it on time.

STEM CALCULUS STUDENT SURVEY OVERVIEW

- Surveyed California community college students who either enrolled in STEM Calculus 1 or were a first-time student who declared a STEM major, fall 2019 through fall 2025
- Engaged nearly 2,000 participants from 57 colleges across the system
- Administered online in fall 2025
- Explored students' prior math preparation, route to STEM Calculus 1, course experiences, and outcomes
- Captured students' perceptions of their readiness for and performance in STEM Calculus 1 and the factors impacting their success

STUDENTS MAY BE CONFUSED BY THE TERM "STEM CALCULUS"

When reviewing students' self-reported first math course at one of the system's colleges, 191 respondents said they began in or above Calculus 1. These data suggest that the term "STEM Calculus" may have confused students who were more familiar with local course titles. Additionally, a subset of students (*n* = 17) who reported never enrolling indicated elsewhere in the survey that they had already completed calculus, were currently enrolled in it, or were enrolled in an equivalent course.

STUDENTS MAY HAVE CHANGED THEIR EDUCATIONAL GOALS

Colleges selected students for survey participation if they had a STEM major on record and their academic plan included STEM Calculus 1. The largest share of respondents identified as Science, Math, and Engineering majors (28%, *n* = 107), a group that clearly requires this course. At the same time, Healthcare/Health Sciences (18%, *n* = 94), Business (11%), and Computer and Information Technology (8%) were the next most common majors, which may not involve completion of STEM Calculus 1. The rest of the respondents reported another major, suggesting that while a student may have declared a STEM major at some point in their college journey, their educational plans may have changed (Table 1, p. 2).

MORE THAN HALF HAD NOT YET MET THE MATH REQUIRED FOR THEIR MAJOR OR WERE UNSURE

Overall, 45% of students who chose not to take STEM Calculus 1 (*n* = 233) reported having already fulfilled their math requirement before completing the survey; 31% had not yet, and 22% were unsure (Table 2).

However, when zeroing in on students who reported a Science, Math, or Engineering major on the survey, more than half had not yet met this milestone (55%), suggesting they may be delaying enrollment in STEM Calculus 1. Another 18% reported not knowing whether they had met the requirement.

Table 1. Majors For Students Who Chose Not to Take STEM Calculus 1

Major	n	%
Science, Math, and Engineering	107	28%
Healthcare/Health Sciences	94	18%
Other	73	14%
Business	55	11%
No Response	44	9%
Computer and Information Technology	40	8%
Education	25	5%
Arts, Communication, and Humanities	21	4%
Undecided	17	3%
Public Safety	6	1%

For students who reported other majors, half said they had already met their math requirement without taking STEM Calculus 1, suggesting they may have switched to a program with a different math pathway (e.g., statistics), even though official records still listed them as STEM majors. At the same time, nearly 50% indicated they had not reached this milestone or were uncertain if they had.

Table 2. Math Requirement Status Among Students Who Chose Not to Take Calculus 1 by Major Type

Math Requirement Status	Science, Math, and Engineering Major		Other Major		Overall	
	n	%	n	%	n	%
I already met the math requirement	29	27%	204	50%	233	45%
I have not yet met the requirement	59	55%	104	25%	163	31%
I don't know	19	18%	93	23%	112	22%
No response	0	0%	11	3%	11	2%

MANY STEM STUDENTS WHO HAVE NOT MET THEIR MATH REQUIREMENT FEEL UNDERPREPARED

Students who had not yet completed this milestone were asked to select all the reasons they had not taken STEM Calculus 1 (Table 3). Among those who responded to this item (*n* = 173), the largest proportion reported that the course was not required for their major (27%). Feeling unprepared for Calculus also topped the list among those who had not yet taken the course (27%), signaling a need to proactively share resources and supports during advising and educational planning to help students believe they can succeed in this critical course.

Students who selected "Other" could provide an open-ended response about why they had not yet taken STEM Calculus 1. One-third of respondents who provided an open-ended response (*n* = 53) indicated that they still needed to complete prerequisite courses before attempting STEM Calculus 1. An additional 10 students indicated that they planned to take the course in the future.

Table 3. Reasons Why Students Chose Not to Take STEM Calculus 1

Reason	n	%
Not required for my major	48	27%
I don't feel prepared to take it	47	27%
Other	43	25%
The class didn't work with my schedule	19	11%
I wanted to enroll in classes I'm more interested in	13	8%
I don't think I should have been placed into Calculus 1	11	6%
The class I wanted was full	11	6%
I already passed Calculus 1 in high school	4	2%
I heard the instructor was bad	2	1%

**Since students could select more than one reason, the sum does not equal 100%.*

Conclusions

These findings suggest colleges can boost the success of all students, regardless of major, by:

- Making the link between STEM Calculus 1 and each major that requires it explicit in program information, using plain language in course titles.
- Encouraging students to confirm their major and academic plan at key points (i.e., registration each term, during counselor visits) so they receive accurate guidance about the math courses they need.
- Ensuring students know about the supports and resources available for STEM Calculus 1 before they enroll, so they feel ready to take the course and succeed in it.

FOR MORE INFORMATION

Find details on data and methods and all findings in the technical appendices.

Find results from survey participants who did take STEM Calculus 1 in *Research Brief: What STEM Students Say About Their Calculus 1 Preparation, Experiences, and Success*.