

Inquiring Into the State of Math Preparation at the University of California

Statewide and even nationwide conversations and media coverage have focused on declining math preparation within the University of California as an argument for reinstating standardized tests as a factor in college admissions. As such, it is important to have a comprehensive view of the current state of math preparation and the relationship to admissions policies. Below, Just Equations clarifies current evidence about math preparation and responds to common misperceptions that have been circulating in the media and elsewhere.

Do reports about declining math preparation in the University of California prove that test-free admissions policies have been a mistake?

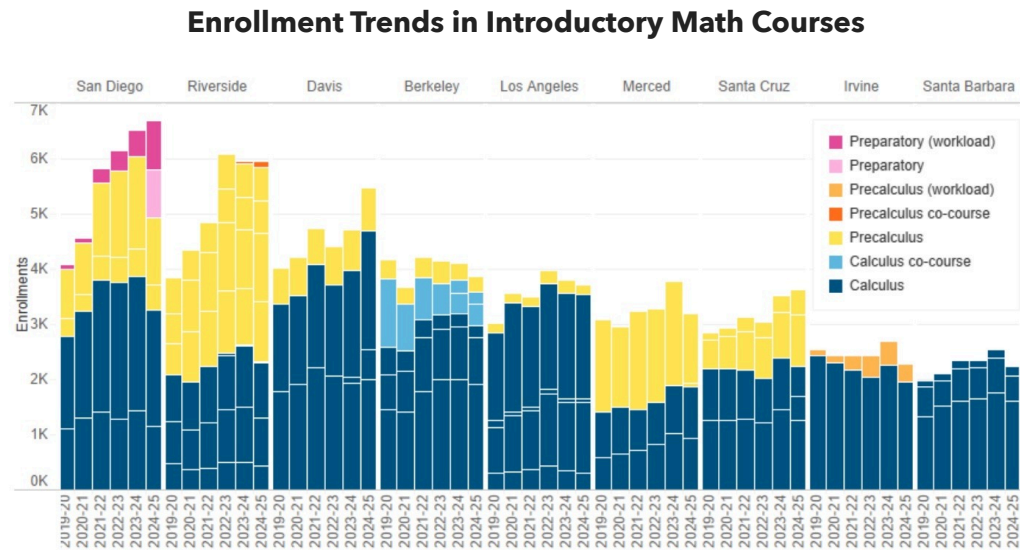
No. K-12 math achievement has declined across the country, and [indeed the world](#), over the [past decade or more](#). This trend began before any changes to admissions and has no relationship to college admissions policies. Experts believe the declines are driven by long-term trends, such as [pandemic-era disruptions](#), [absenteeism](#), [effects of social media](#), [teacher shortages](#), and [students' use of AI](#).

Is it true that many entering UC students are below the middle school level in math?

No. In fact, at seven of UC's nine undergraduate campuses through at least the 2024-25 school year, no students were enrolled in precollege courses, defined as courses below the precalculus level, according to a 2025 [UC Office of the President \(UCOP\) report](#) on introductory math. The vast majority of students requiring calculus for their majors were able to start their math sequences with calculus or a higher-level course. Campus examples include Berkeley (93 percent), Davis (86 percent), and Los Angeles (95 percent). Only one campus—Riverside—saw a majority of students placing below calculus. That campus also reported 11 students (or two-tenths of 1 percent of introductory math enrollments) taking a precollege course in fall 2024.

UC San Diego—the source of some of the dire claims about student preparation—has been an outlier. UCSD has offered a precollege remedial course below precalculus

since 2016. Two years ago, UCSD expanded that to two precollege courses, claiming that up to one-twelfth of students needed to review elementary and middle school math.



SOURCE: University of California, Institutional Research & Planning, Adapting Introductory Math Instruction at UC, October 2025, Figure 1. NOTE: Some enrollments, such as those for the UCSD preparatory courses, reflect duplicated counts, meaning that a student who repeats a preparatory course or takes two preparatory courses during the year is counted twice.

What is the status of precollege math placements at UC San Diego?

Despite dire reports about math readiness, the vast majority of UCSD students who needed to take a math course (close to 85 percent in fall 2025, or 5,846 out of 6,940 students) were deemed ready for college-level math in precalculus, calculus, or a higher-level course, according to a November 2025 UCSD faculty report.

Table 1. Growth in the Number of Students with Insufficient Math Preparation

Placement Entering Fall	Math Placement Snapshots at 3rd Week Fall Enrollment FA20-FA25											
	FA20		FA21		FA22		FA23		FA24		FA25	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Math 2	32	0.5%	191	2.5%	390	6.0%	490	7.0%	528	7.2%	665	8.5%
Math 3B	-	NA	-	NA	-	NA	-	NA	388	5.3%	256	3.3%
Math 3C	532	8.2%	979	13.0%	1136	17.3%	953	13.6%	257	3.5%	111	1.4%
Math 4C	333	5.2%	347	4.6%	326	5.0%	448	6.4%	403	5.5%	251	3.2%
Math 10A or 4C	71	1.1%	82	1.1%	101	1.5%	141	2.0%	149	2.0%	173	2.2%
Math 10A (not 4C)	410	6.4%	563	7.5%	517	7.9%	586	8.4%	555	7.6%	516	6.6%
Math 20A	722	11.2%	760	10.1%	523	8.0%	606	8.7%	536	7.3%	691	8.9%
Math 20A or 10B	391	6.1%	423	5.6%	338	5.2%	373	5.3%	397	5.4%	359	4.6%
> Math 20A	3114	48.3%	3030	40.3%	2062	31.5%	2264	32.4%	2981	40.7%	3745	48.0%
No Placement (needs Math)	22	0.3%	159	2.1%	238	3.6%	214	3.1%	244	3.3%	173	2.2%
Does not need Math	822	12.7%	982	13.1%	920	14.0%	917	13.1%	881	12.0%	859	11.0%
Year Total	6449	100.0%	7516	99.9%	6551	100.0%	6992	100.0%	7319	100.0%	7799	100.0%

SOURCE: Senate-Administration Workgroup on Admissions Final Report November 6, 2025, Table 1

The report highlighted an increasing number of students with calculus requirements whom the campus deemed not ready for college-level math based on a placement test. That about one-twelfth of students did not correctly answer some test questions covering elementary and middle school standards is concerning. It shows that they have gaps in their understanding that need to be addressed. It does not mean they have no middle school math skills or cannot do math.

Still, UCSD has vastly more enrollments in precollege courses than all other campuses combined—77 percent of all systemwide precollege enrollments. (According to the 2025 UCOP report, the campus had 1,755 such enrollments in the 2024-25 year, while a [2026 Regents item](#) produced by UCOP shows 2,275 precollege enrollments for the entire system.)

Why does UCSD—considered the third most selective among UC undergraduate campuses—have so many more precollege math enrollments than any other UC campus?

A direct comparison is not possible because campuses have different processes for measuring students' calculus readiness. But the public record includes several actions taken by UCSD that would raise the proportion of students deemed in need of precollege courses, regardless of underlying preparation levels.

First, it's important to understand math readiness in the context of preparation for calculus. Typically, calculus courses are required for students in STEM majors and a few

other quantitatively intense disciplines, such as business and economics. According to the organization [Transforming Postsecondary Education in Mathematics](#) (TPSE), an average of 54 percent of students at research-intensive U.S. universities are in majors that typically require calculus. Based on the fields in which its students graduate, TPSE estimates the proportion of UCSD graduates whose majors require calculus at 59 percent (among UC campuses, only Berkeley is higher, at 65 percent).

In practice, however, UCSD has been requiring up to [80 percent of its students](#) to take calculus courses. Some of the students who are deemed “not ready” for calculus are in disciplines where calculus may be functioning as a gatekeeper—rather than as a true prerequisite. That could artificially increase the proportion of students assigned to precollege math courses. In fact, UCSD’s own report recommended conducting a review to determine whether all existing calculus requirements are, in fact, valid.

Are there other reasons why UCSD precollege remedial assignments have been increasing?

A complete answer would require more transparency from UCSD about its placement test content, conditions, and scoring rubrics. Nevertheless, considerable information revealed elsewhere in the public record raises questions about what has been reported by UCSD and circulated in the media. In fact, a close look reveals that UCSD’s report contains exaggerations and omits important context.

An oft-repeated statistic from that report—that “the number of students whose math skills fall below high school level increased nearly thirtyfold”—distorts the actual status of math preparation at UCSD in recent years:

- Over the 2019-2025 time period, first-year enrollment at UCSD rose by about 30 percent, a fact that is only tangentially mentioned in the report. The increase from 5,997 to 7,799 students would naturally lead to an increase in the absolute number of students considered underprepared, even if students’ preparation rates did not change. Furthermore, with the larger class, newly admitted students (i.e., those admitted when the target class size is 7,800, but who would not have been admitted with a target class size of 6,000) would, by definition, cluster at the bottom of the preparation range of the students previously admitted, if not below it.
- To get the “thirtyfold” metric, the report started with fall 2020, during the COVID-19 pandemic, when enrollments in precollege math courses were particularly low (32 students—compared to 48 enrollments the prior year) and ended with fall 2025,

after various changes to placement practices, described below, collectively contributed to higher precollege enrollments (921 students). The choice of fall 2020 as a starting point made the increase appear more dramatic—29-fold vs. 19-fold.

- The report fails to disclose that UCSD’s math department moved the goalposts on math preparation several times. In 2024, the department [raised the cutoff score](#) for a student to place into precalculus, the lowest-level college math course. It also [stopped allowing students to use calculators](#) on the placement exam. (At the same time, it created a second precollege course, so that students with the lowest placement scores would have to take at least two quarters of remedial math before starting precalculus.) While those changes happen to be discoverable in the public record, there may be other changes that are not.

Even if students’ underlying preparation levels had not changed at all, such shifts would automatically assign more students to precollege classes (while the addition of a second remedial course made it harder for students to exit the precollege sequence). In fact, the known 2024 changes to placement conditions and scoring coincided with a near-doubling in the number of students assigned to precollege courses. It is unclear what the precollege enrollment level would have been if those changes had not taken place. Nevertheless, it would be misguided to attribute the increase to the test-free policy, which had been in place for four years by that point.

Using fall 2019 as a starting point, and not including the years after the goalposts were moved, the increase in precollege enrollments was more modest—from 0.8 percent in fall 2019 to 7 percent in fall 2023—if still concerning. However, an unknown percentage of those students are in majors that may not truly require calculus, so 7 percent may still be an artificially high estimate of UCSD students needing precollege math courses. And at least some of this increase is a natural result of admitting from a broader pool of students.

Did changes in the composition of the entering student body after test-free admissions began cause UCSD’s large increase in lower math placements?

The UCSD report made another error in attributing the supposed rise in precollege math placements to increased admission of students from LCFF+ schools (which serve high concentrations of low-income students, students with disabilities, and foster youth). This claim is demonstrably false. By 2025, LCFF+ students constituted about 20 percent of first-year students, vs. 17.3 percent of those entering in 2019. That’s an

increase of 15 percent—which cannot possibly explain a roughly sevenfold spike in precollege enrollments (not to mention the claimed thirtyfold increase).

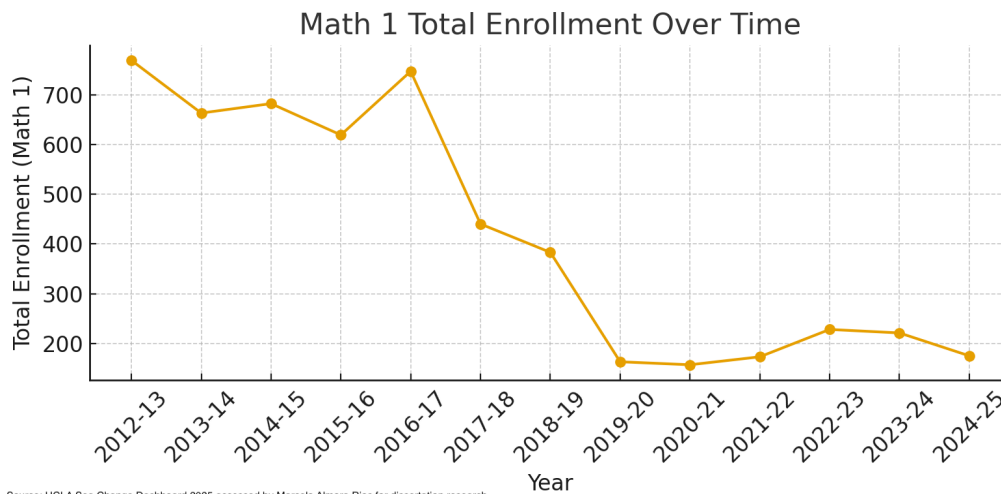
Further, there was only one year during the entire period—2022–23—in which LCFF+ enrollments increased as a proportion of incoming first-year students, according to Table 6 in the UCSD faculty report. Between 2022 and 2024, precollege enrollments more than doubled, from 390 to 916, while LCFF+ students declined by more than 10 percent, from 2,018 to 1,799. The increase in LCFF+ students cannot explain the increase.

How are UC campuses addressing concerns about students’ math readiness?

As mentioned earlier, UCSD is anomalous in the UC system in offering a two-course remedial sequence to hundreds of students. There is no indication in any of the UCSD reports that the campus explored research into the effectiveness of remedial placement tests and courses. A significant body of research has examined contexts in which placement into college-level courses with just-in-time support, such as corequisite strategies, [can be more effective](#) than placement into precollege math sequences.

Other UC campuses have adopted a variety of other strategies.

UCLA requires at most one course below calculus—precalculus, in which the number of students enrolled has declined, as documented by Marcelo Almora Rios, a UCLA doctoral candidate and former Just Equations research fellow whose forthcoming dissertation is about how universities measure calculus readiness.



Source: UCLA Sea Change Dashboard accessed by Marcelo Almora Rios

One reason for the decline appears to be the introduction of UCLA's Math for Life Scientists sequence. According to the [UCOP analysis](#), more than half of UCLA's introductory math enrollments are in this course, which meets the math requirement for life sciences majors. The sequence was piloted in 2013; a year later, it had 200 students enrolled. Today, it has replaced the math department's courses for the majority of life sciences majors, serving about 1,800 students per year (versus around 70 for the math department's calculus course for life sciences). Peer-reviewed studies in [CBE-Life Sciences Education](#) and the [Bulletin of Mathematical Biology](#) demonstrate that the course is associated with higher grades in subsequent courses, narrower achievement gaps, and increased interest among students in using mathematics in biology. Students are not required to take precalculus before enrolling in this course.

In 2020, **UC Berkeley**'s math department developed a [Solid Foundations Program](#), which includes precalculus summer and fall courses as well as a corequisite or "foundations" course that a student can take alongside calculus. Based on the program's success, the campus is expanding the foundations course to high schools. The program was started because campus assessments prior to the pandemic had found that up to half of the students enrolling in calculus were not ready for the course, and some needed help with fractions and exponents. Rather than using placement tests, Berkeley advises students to enroll in the courses aligned with their prior preparation and intended major. In recent years about 7 percent of students were enrolled in precalculus and around 15 percent took a calculus corequisite.

A more recent [report from UC Berkeley math faculty](#) claims that in fall 2021, 2022, and 2023—in the wake of the COVID-19 pandemic—a quarter of students enrolled in calculus had severe preparation deficits. More than 60 percent of those students passed the course with a C or better—suggesting that either they were not as ill-prepared as indicated or that Berkeley’s math program was successful in supporting them. The report does not say whether these students participated in the corequisite foundation course. It is also silent on math outcomes in 2024-25 and 2025-26.

UC Santa Barbara does not offer courses below calculus. Students in need of preparatory coursework in math are referred to Santa Barbara City College. The math department chair reports that [this approach is working well](#).

UC Riverside faculty have a redesigned calculus series—called The Principles of Calculus—intended to reimagine how calculus is taught and provide a more inclusive gateway to STEM opportunities. It is offered in addition to traditional calculus and has yielded promising early results.

UC Davis and **UC Riverside** list precollege courses on their books, but, at least through fall 2024, enrollment was negligible.