



BOARD OF ADMISSIONS AND RELATIONS WITH SCHOOLS (BOARS)

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**Statement on the Impact of Calculus on UC Admissions
UC Board of Admissions and Relations with Schools (BOARS)
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As public schools throughout the state transition to California's new K-12 standards for Mathematics (often referred to as the "Common Core State Standards"), middle school and high school students will see changes in the math curriculum and courses offered. The Common Core math pathways for high school courses (Algebra I-Geometry-Algebra II-Advanced Math, or Mathematics I-Mathematics II-Mathematics III-Advanced Math) are designed to improve students' preparation for college-level math. However, these changes have caused stress for some students and parents. A main concern is that the new curriculum provides fewer opportunities to take advanced math classes, particularly calculus, and that as a result students' college applications will be less competitive.

The University of California's Board of Admissions and Relations with Schools (BOARS) has been asked to clarify some of the issues related to the role of calculus in UC admissions.

Does completing calculus in high school have special weight in UC admissions decisions?

Generally not. No single course, including calculus, determines an admissions decision. All UC campuses conduct a comprehensive review of each application, considering the student's entire transcript, extracurricular activities, leadership potential, and other factors. The campuses look for applicants who show passion and individuality, and whose academic choices fit their unique set of interests, circumstances and skills. While rigorous coursework is a positive factor, poor performance in an advanced class such as calculus usually does not strengthen a student's application.

Although UC recommends that students study math throughout high school, the minimum admissions requirement is three years of high school math, through Algebra II or Mathematics III. BOARS notes that at every UC campus, even students with only this minimum mathematics background can be competitive applicants. Furthermore, students who go beyond the minimum math requirement should not view calculus as the only option. Other possibilities include discrete math, math analysis, pre-calculus, and statistics, with the best choice depending on a student's interests and preparation.

A few campuses do give additional consideration to calculus for their applicants to engineering majors. Even in those cases, completing calculus during high school is not a strict requirement. The main consideration is that potential engineering students should demonstrate sufficient proficiency in mathematics. This can be done by other means, including high scores on the SAT I Math section or on the optional SAT Math Level II subject exam.

Does taking calculus in the junior year of high school have special weight in UC admissions decisions?

No, although as noted above, engineering applicants who will not have completed calculus at the time of their application might consider taking a standardized math exam to show their readiness for college mathematics. In recent years only about one-quarter of UC applicants completed a calculus course by the start of their senior year.

Should calculus be offered in high schools?

Yes, definitely. For college-bound students, high school coursework is intended not only to ensure college admission, but more importantly, to prepare students to take full advantage of their opportunities once they arrive at a college campus. Studying calculus in high school is especially helpful for students majoring in computer science, economics, engineering, math, and the physical sciences, where coursework is highly sequential. Students who enter with some calculus may have a wider choice of college classes and more flexibility in scheduling desired courses. BOARS strongly recommends that high schools maintain calculus as an option for enthusiastic, well-prepared students.

However, BOARS also strongly urges students **not** to race to calculus at the cost of full mastery of the earlier math curriculum. BOARS commends the Common Core's goal of deeper understanding of the mathematical concepts taught at each K-12 grade level. A strong grasp of these ideas is crucial for college coursework in many fields, and students should be sure to take enough time to master the material. Choosing an individually appropriate course of study is far more important than rushing into advanced classes without first solidifying conceptual knowledge. Indeed, students whose math classes are at a mismatched level – either too advanced or too basic – often become frustrated and lose interest in the topic.