



BOARD OF ADMISSIONS AND RELATIONS WITH SCHOOLS (BOARS)

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Assembly of the Academic Senate
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Re: BOARS Statement on Basic Math for all Admitted UC Students

Dear California Educator,

In July 2013, the Board of Admissions and Relations with Schools (BOARS) prepared the attached statement on the mathematical preparation of all undergraduates entering the University of California. This statement declares that going forward, all students must complete the basic mathematics defined by the college-ready standards of the Common Core State Standards for Mathematics (CCSSM) prior to enrolling in a UC-transferable college mathematics or statistics course. BOARS anticipates that once the Common Core is fully implemented, students who do not successfully complete the CCSSM curriculum in high school may resolve any gaps in their studies at a California Community College by taking appropriate prerequisite coursework before enrolling in a UC-transferable math or statistics course.

The CCSSM identifies the subjects and the standards of mathematical practice that constitute college readiness. It does not prescribe a specific curriculum to meet those standards. Much of the longstanding discussion surrounding what foundational mathematics is necessary for college-level mathematics focuses on algebra. But it is important to note that algebra is only one of several topics identified in the CCSSM. Also specified are number and quantity, functions, modeling, geometry, and statistics and probability.

As the state shifts toward CCSSM, use of the traditional mathematics course sequence to determine whether students have adequately mastered the college-ready material is called into question. Specifically, the University of California has used Intermediate Algebra as the “gateway” course to UC-transferable math and statistics courses. This practice was based on the assumption that students who pass Intermediate Algebra have gained sufficient knowledge to be prepared for a college-level mathematics course. Such is the “proxy” role referenced in the BOARS statement.

BOARS acknowledges that the continued use of Intermediate Algebra as the prerequisite for UC-transferable courses is problematic. Such courses traditionally cover more advanced topics than are included in the basic college-ready CCSSM standards. Thus, BOARS’s statement closes with the expectation that future UC-transferable courses will have prerequisites that align with the Common Core, not prerequisites that have a particular name.

As is current practice, UC will not assess the content of prerequisites for UC-transferable courses. The prerequisite courses will be identified by the faculty at the community colleges. The system of using Transferable Course Agreements between the segments of higher education in California is based on trust and respect for the faculty's authority to make local decisions consistent with the broad guidelines for such agreements.

BOARS recognizes that this is a period of transition in mathematics instruction, moving from traditional course sequences to new courses and sequences. Within the CCSSM, there are multiple pathways to meet the college-ready standards, and BOARS encourages the development of such new approaches within the California Community Colleges. The key is to ensure that students have met the standards of the Common Core State Standards for Mathematics, not that they have completed a specific course.

Sincerely,

A handwritten signature in black ink, appearing to read "George Johnson", with a long, sweeping horizontal stroke extending to the right.

George Johnson
BOARS Chair

Encl: BOARS Statement on Basic Math for all Students, July 2013

UC Board of Admissions and Relations with Schools (BOARS)

Statement on Basic Math for All Admitted UC Students

July 2013

All students admitted to the University of California, whether as freshmen or as transfer students, must demonstrate a minimal level of mathematical competence. For freshman applicants, demonstration of this minimal level of competence entails successfully passing three high school courses that, according to Senate Regulation 424.3.c, “must include the topics covered in elementary and advanced algebra and two- and three-dimensional geometry.”¹ The Mathematics section of the online “A-G Guide”² makes explicit reference to both the Common Core State Standards for Mathematics³ (CCSSM) and the Intersegmental Committee of Academic Senates (ICAS) “Statement on Competencies in Mathematics Expected of Entering College Students”.⁴ The most recent version of the ICAS mathematical competency statement makes clear the close alignment between it and the CCSSM. Both define the mathematics that all students should study in order to be college ready.

The ICAS “Statement of Competencies in Mathematics Expected of Entering College Students” has been jointly developed and adopted by all three segments of public higher education in California. Given the agreement between the ICAS statement and the basic elements of the CCSSM for high school⁵, BOARS believes that the basic mathematics of the CCSSM can appropriately be used to define the minimal level of mathematical competence that all incoming UC students should demonstrate.

The Common Core State Standards were adopted by the state of California in 2010, and K-12 schools are in the process of adjusting their curriculum and teaching practices to begin implementing Common Core as of the 2014-15 school year. Similarly, California community colleges (CCCs) have not yet fully developed math sequences that are aligned with the CCSSM. Rather, most CCCs continue to recommend the traditional Elementary Algebra – Intermediate Algebra sequence for students who have not demonstrated competence in high school mathematics.

It is current UC policy is that any transferable math or statistics course that may count toward the quantitative reasoning breadth requirement must have Intermediate Algebra or its equivalent⁶ as an explicit prerequisite. This prerequisite requirement allows Intermediate Algebra to serve as a proxy for the basic level of mathematical competence expected of all students attending UC.

¹ <http://senate.universityofcalifornia.edu/manual/rpart2.html#r424>

² <http://www.ucop.edu/aguide/a-g-requirements/c-mathematics/index.html>

³ <http://www.corestandards.org/Math>

⁴ <http://icas-ca.org/competencies-in-mathematics>

⁵ The CCSSM states that “The high school standards specify the mathematics that all students should study in order to be college and career ready. Additional mathematics that students should learn in order to take advanced courses such as calculus, advanced statistics, or discrete mathematics is indicated by (+).” The phrases “basic mathematics” and “college-ready content standards” in this document refers to those content standards that are not indicated by a (+).

⁶ http://info.assist.org/pdf/assist/2012_uc_tca_letter.pdf

Specifying that transferable courses must have at least Intermediate Algebra as a prerequisite is not fully consistent with the use of the basic mathematics of the CCSSM as a measure of college readiness in that most existing Intermediate Algebra courses contain topics that are identified in the CCSSM as part of the (+) standards. Because current course offerings of Intermediate Algebra include material identified in the CCSSM as “additional mathematics that students should learn in order to take advanced courses such as calculus, advanced statistics, or discrete mathematics,” it will not be appropriate in the future to use traditional Intermediate Algebra (i.e., Intermediate Algebra as defined prior to CCSSM implementation) as the primary standard for demonstrating the minimal level of mathematical competence that BOARS seeks in students admitted to UC. Requiring that all prospective transfer students pass the current version of Intermediate Algebra would be asking more of them than UC will ask of students entering as freshmen who have completed CCSSM-aligned high school math courses. As such, BOARS expects that the Transferable Course Agreement Guidelines will be rewritten to clarify that the prerequisite mathematics for transferable courses should align with the college-ready content standards of the CCSSM.