

Department of Legislative Services
Maryland General Assembly
2021 Session

FISCAL AND POLICY NOTE
First Reader

House Bill 823
Ways and Means

(Delegate Rose)

Public Schools - Mathematics Credit - College Preparatory Computer Science or
Computer Programming Course

This bill authorizes a student enrolled at a public high school to satisfy one credit of a requirement to earn three credits in mathematics by completing a credit in Advanced Placement (AP) computer science course or an equivalently rigorous college preparatory computer science or computer programming course selected by the local board of education if the local board has certified to the Maryland State Department of Education (MSDE) that the course may count toward that mathematics graduation requirement. In order for a computer science or computer programming course to qualify for math credit under the bill, a student must enroll in the course concurrently with or after completing Algebra II. **The bill takes effect July 1, 2021.**

Fiscal Summary

State Effect: None. The bill generally codifies existing practice.

Local Effect: None. The bill generally codifies existing practice.

Small Business Effect: None.

Analysis

Current Law:

Computer Science Courses

Chapter 358 of 2018 requires, beginning in the 2021-2022 school year, each public high school to offer at least one high-quality computer science course that meets or exceeds the curriculum standards and requirements established by the State Board of Education (SBE). Local boards must also make efforts to (1) incorporate computer science in each public elementary and middle school and (2) increase enrollment in middle and high school computer science courses from the following categories:

- female students;
- students with disabilities; and
- students of ethnic, racial, and other demographic groups that are underrepresented in the field of computer science as identified by the U.S. Equal Employment Opportunity Commission.

High School Diploma Requirements

With the advice of the State Superintendent of Schools, SBE must establish minimum requirements for issuing certificates and diplomas by public and private high schools. Local school systems may establish graduation requirements beyond the minimum requirements established by the board.

College and Career Readiness and College Completion Act

According to the College and Career Readiness and College Completion Act of 2013 (Chapter 533), each student must enroll in a mathematics course in each year of high school that the student attends high school. MSDE may adopt regulations that establish the mathematics and math-related courses that fulfill the requirements that may include math-related career and technology program courses. Further, it is the goal of the State that all students achieve mathematics competency in Algebra II.

Public High School Diploma Requirements

According to regulations, an AP Computer Science course may be counted toward one of three graduation requirements: (1) a mathematics credit; (2) a technology credit; or (3) a credit in a career and technical education (CTE) program. However, the AP Computer Science course may *only* satisfy *one* of these credit requirements. The regulations regarding

mathematics credits and proposed regulations regarding high school graduation requirements are explained in further detail below.

According to regulations, to be awarded a high school diploma, a student must be enrolled in a Maryland public school system and have earned a minimum of 21 credits in specified subjects. The regulations state that students must enroll in a mathematics course in each year of high school that the student attends up to a maximum of four years of attendance unless in the fifth or sixth year a mathematics course is needed to meet a graduation requirement. Mathematics and mathematics-related courses must include a mathematics transition course, Algebra II, Pre-calculus, Discrete Mathematics, Linear Algebra, probability and statistics, AP Computer Science, AP Calculus (A/B), AP Calculus (B/C), or a computer science course that is not AP Computer Science if the local school system determines that course meets the mathematics standards. MSDE advises that currently 12 Maryland local school systems award mathematics credit for computer science.

SBE granted permission to publish amendments to the [regulations](#) that set Maryland graduation requirements at the January 26, 2021 SBE meeting. Under those proposed regulations, to graduate from high school, a student must earn *four* credits of mathematics, including one with instruction in algebra aligned with the Maryland Comprehensive Assessment for algebra or one or more credits in subsequent mathematics courses for which Algebra I is a prerequisite, *and* one with instruction in geometry aligned with the content standards for geometry.

Those same proposed regulations amend the technology requirement. Under the proposed regulation, to graduate from high school, a student must earn one computer science, engineering, or technology education credit that includes the study of computers and algorithmic processes or the application of knowledge, tools, and skills to solve practical problems and extend human capabilities. Further, successful completion of a State-approved CTE program, of which computer science could be a part, is still a graduation option.

Higher Education Admissions Standards

Generally, according to [University System of Maryland \(USM\) policy](#), to be admitted to an USM institution, a student must earn a grade of a C or better in four credits of mathematics. The courses must include Algebra I, Geometry, and Algebra II. Students who complete Algebra II prior to their final year must complete the four-year mathematics requirement by taking a course or courses that utilize nontrivial algebra as defined by USM. Essentially, according to these USM standards a computer science course may be one of the four required courses but not the final course. Generally, to be admitted to a

computer science degree program, a student must earn a grade of C or better in college-level calculus.

Morgan State University requires three years of mathematics or State-approved equivalent including, Algebra I or applied math I, formal logic or Geometry, and Algebra II or applied math II. A fourth year of mathematics is strongly recommended. Community colleges are open enrollment institutions and do not have a math requirement. St. Mary's College of Maryland does not list any high school credit requirements on their website.

Private institutions of higher education and public institutions of higher education in other states set their own admissions requirements.

Additional Information

Prior Introductions: HB 1153 of 2020 passed the House and was referred to the Senate Education, Health, and Environmental Affairs, but no further action was taken. Its cross file, SB 892, received a hearing in the Senate Education, Health, and Environmental Affairs Committee, but no further action was taken.

Designated Cross File: None.

Information Source(s): Maryland State Department of Education; University System of Maryland; Morgan State University; St. Mary's College of Maryland; Montgomery County Public Schools; Prince George's County Public Schools; Department of Legislative Services

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