



VIRGINIA BOARD OF EDUCATION

AGENDA ITEM

Agenda Item: D

Date: July 21, 2022

Title: Final Review of Revisions to the Board’s *Guidelines for the Use of Computer Science Courses to Satisfy Graduation Requirements*

Presenter: Mrs. Keisha Tennessee, Computer Science Coordinator

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Purpose of Presentation:

Action required by state or federal law or regulation.

Executive Summary:

The 2015 [Virginia Board of Education Guidelines for the Use of Computer Science Courses to Satisfy Graduation Requirements](#) currently allow for Advanced Placement Computer Science A to meet graduation requirements for students pursuing both standard and advanced diploma types as a mathematics, science, or Career and Technical Education (CTE) credit. At the request of stakeholders, including division school counselors and parents, the International Baccalaureate (IB) Computer Science course was reviewed by Virginia Department of Education (VDOE) staff in the Office of STEM and Innovation and the Office of Career, Technology, and Adult Education (CTAE) for inclusion in the Guidelines. After review, VDOE staff recommend the addition of the IB Computer Science course to the current guidelines. The rigor of the IB Computer Science course coupled with the inquiry nature of the content and practices reflect best practices in mathematics, science, and CTE. The recommended addition would allow IB Computer Science to be used to satisfy mathematics, science, or Career and Technical Education (CTE) graduation requirements.

This request aligns with Priority 1 of the Board’s Comprehensive Plan to provide high-quality, effective learning environments for all students.

Action Requested:

Final review: Action requested at this meeting.

Superintendent's Recommendation

The Superintendent of Public Instruction recommends that the Board of Education approve the proposed addition to the *Board Guidelines for the Use of Computer Science Courses to Satisfy Graduation Requirements*.

Rationale for Action:

Board action is required to update the *Board Guidelines for the Use of Computer Science Courses to Satisfy Graduation Requirements*. Currently, students enrolled in the International Baccalaureate (IB) Program and who take IB Computer Science as part of their IB pathway may receive an advanced diploma as long as they complete all IB Diploma Program requirements. Students who are not in the IB Diploma Program and are enrolled in IB Computer Science may only count this course as an elective. Due to the high level of rigor of the course and the alignment of concepts and practices to the disciplines of mathematics, laboratory science, and CTE, adding IB Computer Science as an alternative to meet graduation requirements for mathematics, science, and Career and Technical Education would be beneficial to students.

Previous Review or Action:

Date: June 15, 2022

Action: First Review

Background Information and Statutory Authority:

Pursuant to [House Bill 1054 \(2014\)](#), the Board was directed to review all computer science coursework available to students in order to determine if each computer science course expectation aligned with the practices of mathematics, science, or Career and Technical Education credits and could serve as an alternative in meeting course and credit requirements for a high school diploma. In addition, the Board was directed to develop guidelines addressing how computer science could satisfy graduation credit. The VDOE Division of School Quality, Instruction, and Performance reviewed the content and expectations of the computer science courses to determine how these met the expectations of each of the different disciplines in terms of the individual discipline and AP Computer Science A was approved as mathematics, science, or CTE course.

Timetable for Further Review/Action:

Upon Board approval, the guidelines will be posted in Town Hall for a 30-day public comment period, pursuant to the Administrative Process Act. The revisions will be communicated to local school divisions via Superintendent's Memo and posted on the VDOE website.

Impact on Fiscal and Human Resources:

School counselors will need to be informed of this change and division pathways for meeting graduation requirements for standard and advanced diplomas will need to be reviewed and may need revision to accommodate the change. No other fiscal or staff impacts are anticipated with the approval of the revised *Board Guidelines for the Use of Computer Science Courses to Satisfy Graduation Requirements*.

**Virginia Board of Education
Guidelines for the Use of Computer Science Courses to
Satisfy Graduation Requirements**

Code of Virginia § 22.1-253.13:4

Approved by the Virginia Board of Education

~~On January 22, 2015~~

Revised XXXX

Guidelines for the Use of Computer Science Courses to Satisfy Graduation Requirements

Subsection D 14 of § 22.1-253.13:4 of the *Code of Virginia* requires the Board to develop guidelines addressing how computer science courses can satisfy graduation requirements.

Pursuant to the requirements of § 22.1-253.13:4, the following guidelines will be effective for students entering the ninth grade for the first time between the 2015–2016 school year and the 2021–2022 school year:

Advanced Placement (AP) Computer Science A may be considered a mathematics course, a laboratory science course, or career and technical education course under the conditions outlined below. A student may apply *AP Computer Science A* coursework to only one of the aforementioned areas.

- I. For **mathematics**, *AP Computer Science A* currently provides a standard credit to satisfy graduation requirements.
- II. For **laboratory science**, *AP Computer Science A* may provide a standard credit to satisfy graduation requirements when students successfully complete laboratory science courses from the different science discipline areas in accordance with the *Regulations Establishing Standards for Accrediting Public Schools in Virginia*.*

For *AP Computer Science A* to be applied as a standard credit for laboratory science, the course must include a significant experimental component where:

1. a testable question is developed based on a review of literature;
2. an hypothesis drives a sequential experimental design;
3. parameters are manipulated under controlled conditions to test how variables behave;
4. systematic methods of organizing derived experimental data are employed;
5. analysis of data requires statistical processes to form conclusions; and
6. conclusions and findings are formally presented, defended, and argued.

International Baccalaureate (IB) Computer Science coursework may be applied as a laboratory science as part of the recognized IB diploma requirement, which is currently governed under the 2012 SOA regulations.*

- III. For **career and technical education**, *AP Computer Science A* may provide a standard credit to satisfy graduation requirements.

AP Computer Science A currently provides a student-selected verified credit for students who (i) successfully complete a career and technical education program sequence in programming or a related programming sequence **and** (ii) successfully complete either the *AP Computer Science A* examination with a score of three or higher.

Pursuant to the requirements of § 22.1-253.13:4, the following guidelines will be effective for students

entering the ninth grade for the first time in the 2022–2023 school year and thereafter:

Advanced Placement (AP) Computer Science A or *International Baccalaureate (IB) Computer Science* may be considered a mathematics course, a laboratory science course, or career and technical education course under the conditions outlined below. A student may apply *AP Computer Science A* or *IB Computer Science* coursework to only one of the aforementioned areas.

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Colleges and universities have varying ways of applying computer science course credits during the admission process. Many colleges and universities do not accept computer science as a mathematics or laboratory science course on student transcripts. In all cases, teachers and school counselors must carefully advise students and parents to ensure that their high school credit-bearing course selections and graduation planning career pathways are consistent with admission standards and program requirements for post-secondary education and training.



Guidelines for the Use of Computer Science Courses to Satisfy Graduation Requirements

As required by § 22.1-253.13:4 of Code of Virginia

VIRGINIA BOARD OF EDUCATION

GUIDELINES FOR THE USE OF COMPUTER SCIENCE COURSES TO SATISFY GRADUATION REQUIREMENTS

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