

Computer Science Courses Satisfying Graduation Requirements Proposal

GS § 115C-81.90

Computer Science Graduation

Requirement Overview

Graduation Requirement

House Bill 8 would create GS § 115C-81.90: Computer Science.

The State Board of Education shall include instruction in computer science in the standard course of study for middle and high school students. Computer science shall mean the study of computers and algorithmic processes, including their (i) principles, (ii) hardware and software designs, (iii) implementation, and (iv) impact on society.

- **Introductory Course.** – Each public school unit shall offer to middle school students an elective introductory computer science course that surveys the field of computer science. The State Board of Education, in consultation with the Department of Public Instruction, shall adopt a list of approved courses that fulfill this requirement and make it publicly available on the Department's website.
- **Graduation Requirement.** – Each public school unit shall offer to high school students a computer science course which includes instruction in using existing technologies and creating new technologies. The public school unit may offer such a course to middle school students. The State Board of Education, in consultation with the Department of Public Instruction, shall adopt a list of approved courses that fulfill this requirement and make it publicly available on the Department's website. A passing grade in this course, whether taken in middle school or high school, satisfies the graduation requirement established in G.S. 115C-12(9d)a.3.
- **Instructional Setting.** – Public school units shall ensure that computer science courses be conducted in an in-person setting when practicable. When an in-person setting is not practicable, computer science courses may be provided through enrollment in remote courses that meet the requirements of Part 11 of Article 16 of this Chapter.

Graduation Requirement

SECTION 2.(b) The State Board of Education shall adopt the list of approved computer science courses required by G.S. 115C-81.90(c), as enacted by this section, and post it on the Department of Public Instruction's website by November 1, 2023. The State Board of Education shall adopt the list of approved introductory computer science courses required by G.S. 115C-81.90(b), as enacted by this section, and post it on the Department of Public Instruction's website by January 1, 2025.

SECTION 2.(c) For the 2024-2025 and 2025-2026 school years only, by July 1 of each school year, a public school unit may submit a signed notification to the Department of Public Instruction stating that a computer science course fulfilling the requirements of G.S. 115C-81.90(c), as enacted by this section, was not available to students. This submission waives the requirement to offer such a course for the school year in which the submission is made. Submission of a notification that a course fulfilling G.S. 115C-81.90(c) was not available shall waive the graduation requirement established by G.S. 115C-12(9d)a.3., as enacted by this act, for students entering the ninth grade in the school year in which the notification is submitted. The Department shall maintain a list of public school units that submitted a notification under this section.

SECTION 2.(d) For the 2025-2026 school year only, by July 1, a public school unit may submit a signed notification to the Department of Public Instruction stating that a computer science course fulfilling the requirements of G.S. 115C-81.90(b), as enacted by this section, was not available to students. The submission waives the requirement to offer such a course for the 2025-2026 school year.

Computer Science, IT, and Technology Education

- Computer Science and Technology now Computer Science, IT, and Technology (CSITT) Education
- Managed by the Office of Career and Technical Education as of November 2022
 - CTE administers the CSITT content through:
 - K-12 NC Computer Science Standard Course of Study
 - CSITT career pathway courses in grade 6-12

Course List Proposal

Computer Science Courses Satisfying Graduation Requirements

- Creates the list of computer science courses that would satisfy the graduation requirement set by GS § 115C-81.90
- Defines a review process to update list of courses

List Creation Process

- Created a 3-step process to generate the list of courses
 1. Compose a comprehensive definition for the discipline of computer science
 2. Identify courses from 2023-2024 Master Course Code List
 3. Review identified courses alignment with computer science principles from GS § 115C-81.90

Step 1: Computer Science Definition

- Researched “computer science” definition from over 35 sources
- Developed draft definition
- Gained feedback from business and industry leaders, postsecondary institutions, curriculum vendors, and community partner associations
- Composed final definition
- Gained feedback from business and industry leaders, postsecondary institutions, curriculum vendors, and community partner associations

Step 1: Computer Science Discipline Definition

Computer Science is a content area focused on the understanding and creation of information and technological systems to be a digital age learner. As part of the Computer Science pathway of study, students can experience:

- Computing Systems and Applications
- Networks and the Internet
- Data Analytics
- Programming and Algorithms
- Impacts of Technology
- STEM
- Information Processing
- Design Thinking
- Engineering and Advanced Manufacturing
- Artificial Intelligence and Robotics
- Cybersecurity and Privacy

Step 2: Initial Course List

- Reviewed the 2023-2024 Master Course Code List
- Identified *any* course that aligned to the Computer Science definition
- Compiled initial list for review of 156 courses

Step 3: Final Course List

- Reviewed course standards alignment to Computer Science principles as outlined by GS § 115C-81.90
 - Computing Systems and Applications
 - Networks and the Internet
 - Data Analytics
 - Programming and Algorithms
 - Impacts of Technology
- 80%+ of the course must focus on 3 or more computer science principles

Step 3: Final Course List

- Published draft list on DPI website in June 2023 – PSUs may begin using this list to inform local graduation recommendations until 2026-27
- Presented to advisory committees of PSU staff
 - Feedback incorporated to create final draft list
- 82 eligible courses
 - 48 high school courses
 - 6 high school courses will be eligible to be offered on the middle school level
 - 12 Career and College Promise courses
 - 22 Local Course Options

Annual List Update

- Annual review of courses to update list
- Requests received by August 1 of each year
- Eligible course must have 80% of the course focus on three or more of the following computer science principles:
 - Computing systems and applications
 - Networks and the internet
 - Data analytics
 - Programming and algorithms
 - Impacts of technology
- Updates to the list will be presented to the State Board of Education for approval

Future Action

- Updating of SBE GRAD policies (Sneha Shah-Coltrane's team)
- Guidance and technical assistance for PSUs
- Creation of a middle grades Introductory Computer Science course

Recommendation

Recommend that the State Board of Education adopt the list of Computer Science Courses Satisfying Graduation Requirements as submitted.