Program of Study: Computer Science

This Program of Study may serve as a graduation guide for the next four plus years, along with other career planning and educational materials. Courses listed in this model may include recommended coursework and should be individualized to students' educational and career goals. Each graduation plan needs to meet minimum high school graduation requirements. Dual Enrollment courses can be high school academic and/or career technical education courses.

Course/Grade	Secondary: Computer Science					Postsecondary:			
	9	10	11	12		TCC	Diploma or AAS		Bachelor of Science
English 4 credits	9th Grade Lit	10th Grade Lit	American Lit	British Lit	**Entrance or Exit Point**	**CET1 TCC Computer Engineering Technology** • ECET 1101 Circuit Analysis I • ECET 1110 Digital Systems I • ECET 1191 Computer Programming Fundamentals • ENGT 1000 Introduction to Engineering Technology	The following computer programming diploma options are available: • Computer Support Specialist (CS14) • Computer Support Specialist (CS23) The following computer programming degree options are available: • Computer Programming (CP23) • Computer Programming (CP24)	**Entrance or Exit Point**	The University System of Georgia offers students' higher education options at 30 institutions throughout the state, providing a wide range of academic programming including certificates and associate, baccalaureate, masters, doctoral and professional degrees.
Math 4 credits	Algebra I	Geometry	Algebra II	Fourth Math Selection					
Science 4 credits	Environmental Science	Physical Science	Biology	Fourth Science Selection					
Social Studies 3 credits	World History	US History	Economics and Government						
PE 1 credit	Health and Personal Fitness		Consult your counselor for course progression. Course progression on this sheet is based on general guidelines.						
Pathway 3 credits	**Intro to Digital Technology**	**Computer Science Principles or AP Computer Science Principles**	**AP Computer Science**	See Related CTAE Electives Below					
Electives	**World Language Sequence** French or Spanish *2 Units Required for admission to Georgia University System Colleges*		**Fine Arts** Visual Arts Band Chorus Drama	Advanced Placement Courses Dual Enrollment Courses			For more information on technical college programs, visit https://kms.tcsg.edu/POA		For more information on college and university programs, visit apps.ds.usg.edu
	Related CTAE Electives Introduction to Business and Tech Business and Technology		**Work-Based Learning** Internship Cooperative Education Youth Apprenticeship						

NOTE: Students have many options to ENTER and EXIT from their academic studies into the workforce. When a student graduates from high school, they are eligible to choose one of many ENTRANCE POINT options: 1. Enroll in either a 2- or 4-year post-secondary program; 2. Enroll in an apprenticeship program or the military; or 3. Enter the workforce using technical skills learned in high school. When a student finishes a 2- or 4-year degree program, they may choose to EXIT and 1. Enroll in an apprenticeship program or the military; 2. Enroll in a professional university degree program; or 3. Enter the workforce using technical skills learned.

Computer Science Career Pathway Completers - Industry Credentialing for High School Students
Upon completion of sequenced courses in the Computer Science Career Pathway, students are eligible to complete the Industry-Recognized student credential for fulfillment of the End of Pathway Assessment. Secondary students completing the Computer Science pathway will be able to sit for the National Industry Credentialed assessment offered on-line from NOCTI. Students will take the NOCTI Computer Science exam.

Sample High Demand Careers in Georgia				
Occupation Specialties	Level of Education Needed	Georgia Average Salary	Annual Average Openings	2014-2024 Employment Outlook
Computer Programmers	Bachelor's Degree	$75,400	230	In Demand, High Skill, High Wage
Computer System Analysts	Bachelor's Degree	$73,800	810	In Demand, High Skill, High Wage
Software Developers, Application	Bachelor's Degree	$86,300	340	In Demand, High Skill, High Wage

Go to GAfutures at www.gafutures.org for more information about your education and career planning, including valuable financial information (grants and scholarships including HOPE Program, grants and loans, FAFSA, and CSS forms).

Computer Science Pathway Description

Career Enhancement Opportunities	**Career-Related Education Activities** • Career Awareness • Career Exploration • Instructional Related • Connecting • Work-Based Learning	**Postsecondary Options:** • 4-Year Universities/ Colleges • 2-Year Colleges • Technical Colleges • State Registered Apprenticeships • Special Purpose Schools • On-the-Job Training • Military	**Earning Postsecondary Credits While in High School** A vital way to get ahead and realize you can pass college courses is by earning postsecondary credits as a high school student. Georgia offers a dual credit program titled Dual Enrollment. You need to talk with your parents, school counselor, or advisor about the proper courses to take each year in high school and dual credit. Students completing the course work in this Plan, will have earned/completed an Industry Credential, Technical Certificate of Credit (TCC), Associates of Applied Science Degree, and/or Bachelor's Degree.

Careers in Computer Science lead individuals to create, modify, and test codes; all while inventing and designing new approaches to computing technology and finding innovative uses for existing technology. Career area focus requires solving complex problems in computing for business, medicine, science, and other fields.

Postsecondary Transition
- Students who will continue their education in a Program of Study at one of the University System of Georgia institutions should prepare to take the ACT or SAT for admissions. Tests for admissions may vary from institution to institution. Contact the selected institution for specific testing information. Additional admissions information can be found at Staying On Course.(https://www.usg.edu/assets/student_affairs/documents/Staying_on_Course.pdf)
- Students who will continue their education in a Program of Study at one of the Technical College System of Georgia institutions should prepare to complete a placement exam.
- Students who will continue their education and training in the US Military should take the ASVAB assessment.
- Students should utilize electronic college and career databases to select the most appropriate postsecondary opportunities to match their selected career field, including registered apprenticeships.
- Georgia's dual-credit programs have been combined into one program entitled Dual Enrollment, in which high school students may earn their high school course credits while taking college courses.

To work as a computer programmer, one must have a bachelor's degree, generally in computer science, mathematics, or information systems. Some computer programmers take coursework in computer science while earning their degrees in accounting, finance and business. Some of those working as computer programmers earn an associate's degree or certificate.

Programming skills and experience are highly valued in this field, particularly knowledge of object-oriented languages and tools. In addition, working computer programmers must constantly update their skills to keep up with changing technology. Specialized knowledge and experience with a language or operating system can lead to a computer programmer becoming a computer software engineer.

Related Pathway Occupations	Other Related Occupations
• Software Engineers • Computer Programmers • Computer & Information Systems Managers • Computer Hardware Engineers • Computer Network Architects • Computer System Analysts • Database Administrators	• Information Security Analysts • Network & Computer Systems Administrators • Video Game Designers ONET Online

Employment of computer programmers is expected to increase 12 percent from 2010 to 2020, about as fast as the average for all occupations. The advances in computer technology require programmers to constantly look for more effective and efficient processes to expedite their ability to spend more time writing new programs.

Student Organization: Future Business Leaders of America (FBLA)	**Programs of Study Developed in Partnership**: the Georgia Department of Education, the Technical College System of Georgia, and the University System of Georgia. #CTAEDelivers