

Computer Science Pathway

Grade Level	I. English/ Language Arts	II. Math	III. Science	IV. Social Studies	V. World Languages	VI. Health and Wellness	VII. Possible Electives
5	5th Grade ELA/Social Studies	5th Grade Math	5th Grade Science			5th Grade Health and Wellness	NASA/Biotechnology 5 Coding 5
6	6th Grade ELA/Social Studies	6th Grade Math	6th Grade Science			6th Grade Health and Wellness	NASA/Biotechnology 6 Intro to Computer Science (Code HS)
7	7th Grade ELA/Social Studies	7th Grade Math	7th Grade Science			7th Grade Health and Wellness	NASA/Biotechnology 7 Coding Applications
8	8th Grade ELA/English Honors I	Math I Honors	8th Grade Science or Environmental Honors	World History Honors or 8th grade Social Studies		8th Grade Health and Wellness	NASA/Biotechnology 8 Exploring Biotechnology in Health Science Introduction to Cybersecurity
9	English I Honors Or English II Honors	Math II Honors	Earth/Environmental Science honors or Biology Honors or Physical Science Honors	World History Honors Or Found Prin USA & NC: Civic Literacy Honors	2 Foreign Languages in the same language A two-credit minimum is required for admission to a university in the UNC system.	Health and Physical Education 9	Technology Engineering Design Robotics I Robotics II- Honors Computer Science I Computer Science II
10	English II Honors or English III Honors	Math III Honors	Biology Honors or Physical Science Honors or Chemistry Honors	Found Prin USA & NC: Civic Literacy Honors or American History Honors	Other languages are possible through NCVPS	Advanced Physical Education	COA Introduction to Computers (CIS 110) ECSU Introduction to Computing (CSC 111)
11	English III Honors or Honors English IV	Advanced Functions and Modeling Honors Pre-Calculus Honors (Math 4)	Chemistry Honors or Physical Science	American History Honors or Economics and Personal Finance Honors			ECSU Introduction to Computer Science(CSC 114) Introduction to Cybersecurity A/B

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12	English IV Honors			Economics and Personal Finance Honors			Digital Media I Digital Media II
11th and 12th-grade students may participate in Career-Based Internships/Pre-Apprenticeships coordinated by the Work-Based Learning Coordinator.							

* English IV - students can take COA ENG 111 (or ECSU ENG 102), ENG 112, and ENG 242 to meet the HS English IV requirement, students must take all three COA English classes to earn HS English IV credit

** American History- students can take COA HIS 131 and HIS 132 (OR ECSU 255 and ECSU 256) to meet the HS American History requirement, students must take both COA/ECSU History classes to earn HS American History Credit

*** Math 4- students can take any one of COA MAT 143, MAT 152, MAT 171 or ECSU MATH 115 or MATH 118 to meet the HS Math 4 requirement

Sample Pathway Occupations 2021 Occupational Information Network (O*NET) Data						
Occupation Specialties	Entry Level of Education Needed	2021 Annual Wage Nationwide	2021 Annual Wage NC	Annual Openings 2021-2031 Nationwide	Annual Openings 2021-2031 NC	Bright Outlook Occupation: expected to grow rapidly in the next several years, or will have large numbers of job openings.
Computer System Analysts	Bachelor's Degree Associate's Degree	\$99,270	\$99,340	44,500	1,830	Yes Faster than average 9%
Software Developers/Applications	Bachelor's Degree	\$120,730	\$119,090	143,400	3,290	Yes Faster than average 26%
Computer Programmers	Bachelor's Degree	\$93,000	\$99,060	9,600	240	No Decline (-10% or lower)
Information Security Analysts	Bachelor's Degree	\$102,600	\$119,980	19,500	1,030	Yes Much faster than

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						average (35% or higher)
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Related Pathway Occupations*: Software Engineers Computer Programmers Computer & Information Systems Managers Computer Hardware Engineers Computer Network Architects Computer System Analysts Database Administrators	Other Related Information Technology Occupations*: Information Security Analysts Network & Computer Systems Administrators Video Game Designers Game Designers *ONET Online	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. To work as a computer programmer, one must have a bachelor's degree, generally in computer science, mathematics, or information systems. 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.
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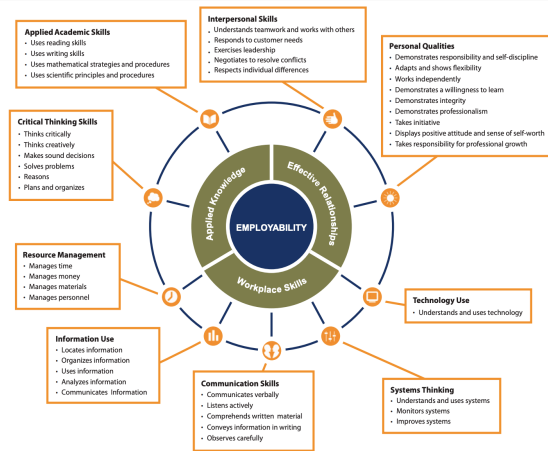
Computer System Analysts: Analyze science, engineering, business, and other data processing problems to implement and improve computer systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations. May analyze or recommend commercially available software.

Software Developers/Applications: Develop, create, and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design software or customize the software for client use with the aim of optimizing operational efficiency. May analyze and design databases within an application area, working individually or coordinating database development as part of a team. May supervise computer programmers.

Computer Programmers: Create, modify, and test the code, forms, and script that allow computer applications to run. Work from specifications drawn up by software developers or other individuals. May assist software developers by analyzing user needs and designing software solutions. May develop and write computer programs to store, locate, and retrieve specific documents, data, and information.

Information Security Analysts: Plan, implement, upgrade, or monitor security measures for the protection of computer networks and information. May ensure appropriate security controls are in place that will safeguard digital files and vital electronic infrastructure. May respond to computer security breaches and viruses.

Employability Skills Related to Computer Science



<https://cte.ed.gov/initiatives/employability-skills-framework>

Communication Skills

Instructing — Teaching others how to do something. Talking to others to convey information effectively.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Interpersonal Skills

Service Orientation — Actively looking for ways to help people.

Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Personal Qualities

Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Resource Management

Time Management — Managing one's own time and the time of others.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action. Adjusting actions in relation to others' actions.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Work-Based Learning Experiences Appropriate for this Course of Study				Business/Industry Partnership Opportunities
Mentorship	Yes	Internship	Yes	TCOM , LP Telephonics MiTek Elizabeth City State University Compro Computers Hoffler Flow Controls, Inc Benedict Group, Inc. The SoundSide Group, Inc.
Business or Industry Field Trip	Yes	Job Shadow	Yes	
		Service Learning	yes	

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For more information about your education and career planning, including valuable financial aid information, see your school counselor							
Coursework	Credits	Coursework	Credits	Course	Credits	Coursework	Credits
Future-Ready Core				Future-Ready Occupational			
English/Language Arts	4	World Languages	2	English/Language Arts	4	Health/Physical Education	1
Math	4	Electives	10	Math	4	World Languages	Not Required
Science	3			Science	3	Employment Preps	2
Social Studies	4			Social Studies	4	CTE	4
Health/Physical Education	1	TOTAL	28			TOTAL (includes 150 School Based Training, 225 Community Service Hours + 225 Paid Employment Hours) Career Portfolio and Completion of IEP Goals	22