

# COMPUTER SCIENCE (AS)

**Award:** Associate of Science Degree

**No. of credits required:** 60

**For more information:** Contact Assistant Professor Jerome Brown, 443-412-2125, jebrown@harford.edu; or Admissions, 443-412-2109.

## Program Description

Computer Science is the study of the design, theory and programming of the computer system. The Computer Science program gives students an understanding of the problem-solving techniques used to program the computer as well as an understanding of the principles that govern the conceptual organization of the computer system and its processes. The program emphasizes the mathematical and scientific components of programming.

## Program Goals

Students who successfully complete the Computer Science Program will:

1. Develop skills and expand their knowledge in computer science through research and self-directed study and communicate their knowledge in speaking and writing.
2. Apply the defining processes of computer science - theory, abstraction, and design - to solve a wide variety of problems.
3. Solve cross discipline problems through the integration of mathematics, traditional sciences and computer science principles.
4. Analyze and evaluate traditional algorithms used for data reorganization and manipulation.
5. Possess the necessary skills for transfer to an accredited four year institution.

## Transfer Information

This program provides the first two years of a bachelor's degree in Computer Science. Students who plan to transfer to a four-year college or university should review the requirements of that institution. If they are significantly different than the requirements of the AS in Computer Science, the student should consult with an academic advisor.

## Employment Information

Computer Science is a field with a projected growth rate of 23% from 2022 to 2023, with an estimate of 9400 new jobs. Computer scientists secure careers that explore problems in computing and develop theories and models to address those problems. They also collaborate with scientists and engineers to solve complex computing problems, determine computing needs and system requirements, develop new computing languages, software systems, and other tools to improve how people work with computers.

## Degree Requirements

### Recommended Course Sequence

First Semester		Credits
ENG 101	English Composition (GE)	3
MATH 203	Calculus I (GM)	4
CSI 130	Introduction to Concepts in Computer Science	3

Behavioral/Social Science Elective (GB) ( <a href="https://catalog.harford.edu/general-education/#behavioral-social-science">https://catalog.harford.edu/general-education/#behavioral-social-science</a> ) <sup>1</sup>	3
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Biological/Physical Science Elective (GS) ( <a href="https://catalog.harford.edu/general-education/#science">https://catalog.harford.edu/general-education/#science</a> ) <sup>1</sup>	3
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**Credits** **16**

### Second Semester

CSI 131	Computer Science I	4
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MATH 204	Calculus II (GM)	4
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Arts/Humanities Elective (GAH) <sup>1</sup>	3
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Physical Education Elective	1
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**Credits** **12**

### Third Semester

CIS 201	Assembly Programming Language	4
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CIS 221	Programming II: C/C++	4
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General Elective <sup>1</sup>	3
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Biological/Physical Lab Science Elective (GL) ( <a href="https://catalog.harford.edu/general-education/#biological-physical-laboratory-science">https://catalog.harford.edu/general-education/#biological-physical-laboratory-science</a> ) <sup>1</sup>	4
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**Credits** **15**

### Fourth Semester

CSI 132	Computer Science II	4
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CIS 214	Programming II: Java	4
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MATH 210	Discrete Structures	3
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Arts/Humanities Elective (GAH) <sup>1</sup>	3
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**Credits** **17**

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**Total Credits** **60**

<sup>1</sup> Electives should be chosen based upon the requirements of the institution to which transfer is planned.

## General Education Degree Requirements

Note: The following codes identify courses which satisfy the General Education Degree Requirements:

Behavioral/Social Science (GB)  
 English Composition (GE)  
 Arts/Humanities (GAH)  
 Interdisciplinary and Emerging Issues (GI)  
 Biological/Physical Laboratory Science (GL)  
 Mathematics (GM)  
 Biological/Physical Science (GS)