

# COMPUTER SCIENCE MAJOR

## Degree Requirements

All students are required to complete overall degree requirements in addition to their major. Please see Degree Completion Requirements (<https://catalog.hiram.edu/undergraduate/student-academic-responsibilities-performance/degree-completion-requirements/>) for full details for students entering in the 2022-2023 catalog year.

Those students who started at Hiram prior to the 2022-2023 academic year will follow the Degree Requirements outlined in your catalog of record.

## Major Requirements

### Integrated Research Components (Capstone)

The computer science program capstone is a sequence of two integrated research components. An integrated research component (IRC) is an integration of research with a specified course and requires a formal research proposal, a significant software implementation, an oral presentation to faculty and peers, and a research paper. An IRC can be added to selected upper-division courses. Choices must be approved by your program advisor and the course instructor.

### Computer Science Electives

We value breadth in coursework, as well as the experience of working in groups, which is an important aspect of software development that is highly valued in industry and graduate school. Therefore, we require that among the 6 courses that you take as CPSC electives and IRC co-requisites, you include at least one course from each of the systems, theory, and group work categories. (CPSC 49800 INTERNSHIP, if taken for 3 or more hours, can count as one of the CPSC 2xxxx courses but not as one of the CPSC 3xxxx courses.)

Alternative courses in each elective category, such as seminar courses, may be substituted for the courses in the list with approval of computer science faculty.

Code	Title	Hours
<b>Required Core Courses</b>		
CPSC 17100	INTRO TO COMPUTER SCI-W/LAB:MM	4
CPSC 17200	INTRO TO PROGRAMMING-W/LAB:MM	4
CPSC 20100	DATA STRUCTUR/ALRITHM-W/LAB:MM	4
CPSC 24000	COMPUTER ETHICS:ES	3
CPSC 25200	COMPUTER ORGANIZATION	4

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CPSC 40000	INTEGRATED RESRCH COMPONENT I	2
and CPSC 3xxxx (co-requisite)		4
CPSC 40100	INTEGRATED RESRCH COMPONENT II	2
and CPSC 3xxxx (co-requisite)		4

### Computer Science Electives

One CPSC elective at the 20000-level or above	3-4
Three CPSC electives at the 30000-level or above	9-12

### Additional Groups

Among the courses fulfilling the above requirements, select at least one course from each of the following groups:

#### Systems Courses

CPSC 33100	VLSI DESIGN
CPSC 34500	OPERATING SYSTEMS
CPSC 35200	COMPUTER SECURITY
CPSC 36300	COMPUTER NETWORKS

#### Theory Courses

CPSC 35100	PROGRAMMING LANGUAGES
CPSC 35800	INTRO DESIGN&ANALYSIS ALGORITHM
CPSC 38600	ARTIFICIAL INTELLIGENCE
CPSC 38800	COMPILER DESIGN & CONSTRUCTION
CPSC 46600	THEORY OF COMPUTATION

#### Group Work Courses

CPSC 21000	DESIGN & BUILD COMPUTER GAMES
CPSC 20500	SYSTEMS PROGRAMMING
CPSC 32201	USER INTERFACE DESIGN
CPSC 35600	DATABASE DESIGN
CPSC 37500	SOFTWARE ENGINEERING

**Total Hours** **43-47**

Early contact with a program advisor is critical to ensure the proper sequencing and choice of computer science courses. A student majoring in computer science must have completed CPSC 17100 INTRO TO COMPUTER SCI-W/LAB:MM and CPSC 17200 INTRO TO PROGRAMMING-W/LAB:MM by the end of their sophomore year in order to finish the major within four years.

Students majoring in computer science at Hiram are well-trained for positions in business and industry. Students considering graduate study in computer science should add mathematics courses in consultation with their computer science advisor.

## Pathway

Course	Title	Hours	Term
<b>First Year</b>			
<b>Fall 12 Week</b>			
CPSC 17100	INTRO TO COMPUTER SCI-W/ LAB:MM <sup>1</sup>	4	_____
UCS 10101	FIRST-YEAR ENDURING QUESTIONS	4	_____
Hiram Core Requirement		4	_____
		<b>Hours</b>	<b>12</b>
<b>Fall 3 Week</b>			
CPSC 24000	COMPUTER ETHICS:ES	3	_____
		<b>Hours</b>	<b>3</b>
<b>Spring 12 Week</b>			
CPSC 17200	INTRO TO PROGRAMMING-W/ LAB:MM <sup>1</sup>	4	_____
UCS 20201	ADDRESSING URGENT QUESTIONS	4	_____

Hiram Core Requirement		4	_____
<b>Hours</b>		<b>12</b>	
<b>Spring 3 Week</b>			
CPSC 2XXXX	Computer Science Elective	4	_____
<b>Hours</b>		<b>4</b>	
<b>Second Year</b>			
<b>Fall 12 Week</b>			
CPSC 20100	DATA STRUCTUR/ALRITHM-W/ LAB:MM <sup>1</sup>	4	_____
<b>Hours</b>		<b>4</b>	
<b>Fall 3 Week</b>			
Hiram Core Requirement <sup>2</sup>		4	_____
<b>Hours</b>		<b>4</b>	
<b>Spring 12 Week</b>			
CPSC 2XXXX	Computer Science Elective	3-4	_____
Elective, Second Major, Minor Course		4	_____
Hiram Core Requirement		4	_____
<b>Hours</b>		<b>11-12</b>	
<b>Spring 3 Week</b>			
Elective, Second Major, Minor Course		4	_____
<b>Hours</b>		<b>4</b>	
<b>Third Year</b>			
<b>Fall 12 Week</b>			
UCS 30301	URGENT CHALLENGE SEMINAR:TT	4	_____
CPSC 3XXXX	Computer Science Elective	3-4	_____
Hiram Core Requirement <sup>2</sup>		4	_____
<b>Hours</b>		<b>11-12</b>	
<b>Fall 3 Week</b>			
Hiram Core Requirement		3-4	_____
<b>Hours</b>		<b>3-4</b>	
<b>Spring 12 Week</b>			
CPSC 40000	INTEGRATED RESRCH COMPONENT I	2	_____
& CPSC 3XXXX Computer Science IRC		4	_____
Elective, Second Major, Minor Course(s)		6	_____
<b>Hours</b>		<b>12</b>	
<b>Spring 3 Week</b>			
Hiram Core Requirement		3-4	_____
<b>Hours</b>		<b>3-4</b>	
<b>Fourth Year</b>			
<b>Fall 12 Week</b>			
CPSC 40100	INTEGRATED RESRCH COMPONENT II	2	_____
& CPSC 3XXXX Computer Science IRC		4	_____
Elective, Second Major, Minor Course(s)		6	_____
<b>Hours</b>		<b>12</b>	
<b>Fall 3 Week</b>			
Elective, Second Major, Minor Course		3-4	_____
<b>Hours</b>		<b>3-4</b>	

<b>Spring 12 Week</b>			
CPSC 25200	COMPUTER ORGANIZATION	4	_____
CPSC 3XXXX	Computer Science Elective	3-4	_____
Elective, Second Major, Minor Course		4	_____
<b>Hours</b>		<b>11-12</b>	
<b>Spring 3 Week</b>			
Elective, Second Major, Minor Course		3-4	_____
<b>Hours</b>		<b>3-4</b>	
<b>Total Hours</b>		<b>120-127</b>	

1

"Critical" to timely degree progression.

2

Students may choose INTD 38800 BIOINFORMATICS as an interdisciplinary course that may also fulfill an Integrated Research Component corequisite.