BACHELOR OF SCIENCE IN COMPUTER SCIENCE

Computer Science spans the range from theory through programming to cutting-edge development of computing solutions. Computer Science offers a foundation that permits graduates to adapt to new technologies and new ideas. The work of computer scientists falls into three categories:

- designing and building software
- developing effective ways to solve computing problems, such as storing information in databases, sending data over networks, or providing new approaches to security problems
- devising new and better ways of using computers and addressing particular challenges in areas such as robotics, computer vision, or digital forensics

Like most Computer Science programs, the YSU Computer Science major requires a significant mathematical background.

The Computer Science program leads to the degree of Bachelor of Science. The flexibility of the program allows the student many choices including a second minor.

This degree may be earned in eight semesters if students average 15 hours per semester.

The benefits of Computer Science bachelor's degree include:

- The median annual salary of **$100,690** for software developers*
- **17% projected job growth** for software developers through 2024*

The advantages of pursuing a Computer Science bachelor's degree at YSU include:

- Multiple terms throughout the year help you to start anytime to complete your degree.
- Full-time faculty accessibility at any time
- Full-time faculty coverage of core courses
- One of the lowest tuition rates in the nation
- Gain insight into the practical issues of building systems by participating in intensive project-oriented courses.
- Enables students to complement their formal foundation in CS with the flexibility to pursue additional studies in other disciplines.

Computer Science spans the range from theory through programming to cutting-edge development of computing solutions. Computer Science offers a foundation that permits graduates to adapt to new technologies and new ideas. The work of computer scientists falls into three categories:

- designing and building software
- developing effective ways to solve computing problems, such as storing information in databases, sending data over networks, or providing new approaches to security problems
- devising new and better ways of using computers and addressing particular challenges in areas such as robotics, computer vision, or digital forensics

Like most Computer Science programs, the YSU Computer Science major requires significant mathematical background.

The Computer Science program leads to the degree of Bachelor of Science. The flexibility of the program allows the student many choices including a second minor.

This degree may be earned in eight semesters if students average 16 hours per semester.

In addition to completing all general University requirements, students wishing to receive the Bachelor of Science in computer science must complete the following:

COURSE	TITLE	S.H.
General Education Requirements		
Core Competencies		9
ENGL 1550	Writing 1	
ENGL 1551	Writing 2	
CMST 1545	Communication Foundations	
Mathematics Requirement	Included in Math minor	
University general education requirements in essential skills and knowledge domains.		28
Arts and Humanities		
PHIL 2625	Introduction to Professional Ethics	
Natural Sciences		
Social Science		
Social and Personal Awareness		
General Education Elective		
Major Requirements		
CSIS 2610	Programming and Problem-Solving	4
CSIS 3700	Data Structures and Objects	4
CSIS 3701	Advanced Object-oriented Programming	3
CSIS 3740	Computer Organization	4
CSCI 3710	Introduction to Discrete Structures	3
CSCI 5806	Operating Systems	3
CSCI 5801	Software Engineering	3
CSCI 5870	Data Structures and Algorithms	3
CSCI 4890	Computer Projects (at least 2 s.h.)	2
ENGL 3743	Professional and Technical Writing	3
Select at least 12 additional semester hours from the approved list available in the department office.		12
Mathematics Minor		
MATH 1571	Calculus 1	4
MATH 1572	Calculus 2	4
MATH 3720	Linear Algebra and Matrix Theory	3
STAT 3743	Probability and Statistics	3
or MATH 3760	Numerical Analysis 1	
Additional MATH course	To meet 18 hour minor	4
Free Electives	Any courses to meet 120 total hours	21
Total Semester Hours		120

Year 1

Fall		**S.H.**
CSIS 2610	Programming and Problem-Solving	4
MATH 1571	Calculus 1	4
ENGL 1550	Writing 1	3
GER Natural Science + Lab		4
	Semester Hours	15
Spring		
CSIS 3700	Data Structures and Objects	4
MATH 1572	Calculus 2 (minor)	4
ENGL 1551	Writing 2	3
CMST 1545	Communication Foundations	3
	Semester Hours	14

Year 2		
Fall		
CSIS 3701	Advanced Object-oriented Programming	3
CSIS 3740	Computer Organization	4
PHIL 2625	Introduction to Professional Ethics (AH)	3
GER Social Science		3
Free Elective		3
	Semester Hours	16
Spring		
CSCI 3710	Introduction to Discrete Structures	3
MATH 3720	Linear Algebra and Matrix Theory	3
ENGL 3743	Professional and Technical Writing	3
GER Social Science		3
GER Arts & Humanities		3
	Semester Hours	15
Year 3		
Fall		
CSCI 5801	Software Engineering	3
CSCI/CSIS Upper Division Elective		3
STAT 3743 or MATH 3760	Probability and Statistics or Numerical Analysis 1	3
GER Social & Personal Awareness		3
Free Elective		3
	Semester Hours	15
Spring		
CSCI/CSIS Upper Division Elective		3
CSCI/CSIS Upper Division Elective		3
Math Minor Upper Division Elective		3
GER Natural Science		3
GER Social & Personal Awareness		3
	Semester Hours	15
Year 4		
Fall		
CSCI 5870	Data Structures and Algorithms	3
CSCI 4890	Computer Projects	2
Math Minor Upper Division Elective		3
GER NS, AH, SS, or SPA		3
Free Elective		3
Free Elective	Any course to meet a total of 120 hours	1
	Semester Hours	15
Spring		
CSCI 5806	Operating Systems	3
CSCI/CSIS Upper Division Elective		3
Free Elective		3
Free Elective		3
Free Elective		3
	Semester Hours	15
	Total Semester Hours	120

Request a Graduation Evaluation after completing 80-85 s.h. from the STEM Advising Center, 2325 Moser Hall, (330) 941-2512.

Learning Outcomes

Computer science students in the BS degree program will:

- be able to analyze, design, implement and test computer programs by using the appropriate data structures and algorithms.
- obtain full-time employment as programmers, systems analysts, computer specialists and in other closely related fields or/and acceptance to graduate programs.
- communicate effectively with written reports and presentations.