COMPUTER SCIENCE MAJOR

Department of Mathematics and Computer Science (https://catalog.washcoll.edu/catalog/departments-programs/mathematics-computer-science/)
Division of Natural Sciences and Mathematics

Our computer science curriculum is consistent with the principles of a liberal education while providing a meaningful preparation for graduate school, professional programs or the work environment. The curriculum reaches across the aisle to other departments and divisions at the college to make meaningful connections for all of the liberal arts. The course load is appropriate for students double-majoring in other subjects at the College.

Foundational courses are the gateway to the major. Prospective majors should begin with CSI 111 Computer Science I. Many CSI upper-level courses require MAT 240 Discrete Mathematics/CSI 240 Discrete Mathematics Discrete Mathematics; students are encouraged to take these courses during their freshman or sophomore year, after successfully completing either MAT 111 Differential Calculus, or MAT 106 Stretch Differential Calculus I / MAT 107 Stretch Differential Calculus IIor CSI 111 Computer Science I. Students should pass prerequisite courses with a grade of C or higher.

Computer Science Major Requirements

Students should begin computer science sequence with CSI 111 Computer Science I; however, students who earn computer science advanced placement credit who may start at a higher level and are encouraged to consult with the Department Chair.

The BS in Computer Science consists of 12 courses (counting the senior capstone experience): Total Credits = 48 credits

Code	Title	Credits	Notes
Foundational and Core Courses		**28**	_____
CSI 111	Computer Science I		_____
CSI 112	Computer Science II		_____
CSI 210	Object Oriented Programming		_____
CSI/MAT 240	Discrete Mathematics		_____
CSI 320	Theory of Computation		_____
CSI 380	Design & Analysis of Algorithms		_____
CSI 460	Software Engineering		_____
Three Electives		**12**	_____
Three Electives chosen from CSI courses numbered 200 and above or any other course approved by the department chair			_____
Select 1 Math Course From Below		**4**	_____
MAT 106 & MAT 107	Stretch Differential Calculus I and Stretch Differential Calculus II		_____
MAT 109	Statistical Inference & Data Analysis I		_____
MAT 111	Differential Calculus		_____
MAT 280	Linear Algebra		_____
Senior Capstone Experience (CSI SCE)		**2-4**	_____
Total Credits		**46-48**	_____

Completion of a three-course track which may include courses listed above:

- A track is a set of three related courses, mutually agreed upon by the student and their computer science advisor (with final approval by the Chair).
- Track courses may include major requirements, computer science electives, or courses outside computer science.
- Track requirements will usually be satisfied by courses that are also used to meet other requirements, such as computer science electives. There is no restriction against courses counting towards the track and something else.

Code	Title	Credits	Notes
Systems Track			_____
CSI 250	Intro Comp Organization & Architecture		_____
CSI 430	Operating Systems		_____
CSI 440	Computer Networks		_____
Data Science Track			_____

MAT 109	Statistical Inference & Data Analysis I	_____
CSI 220	Data Science	_____
CSI 360	Machine Learning	_____
Software Track		_____
CSI 330	GUI and Mobile Programming	_____
CSI 380	Design & Analysis of Algorithms	_____
CSI 460	Software Engineering	_____
Agents Track		_____
CSI 310	Database Systems	_____
CSI 360	Machine Learning	_____
CSI 420	Artificial Intelligence	_____
Electronics Track		_____
CSI 250	Intro Comp Organization & Architecture	_____
MAT 210	Multivariable Calculus	_____
PHY 252	Scientific Modeling & Data Analysis	_____
Cybersecurity Track		_____
CSI 250	Intro Comp Organization & Architecture	_____
CSI 440	Computer Networks	_____
MAT 310	Differential Equations	_____
Games & Graphics Track		_____
CSI 104	Introduction to Game Design	_____
CSI 330	GUI and Mobile Programming	_____
CSI 410	Computer Graphics	_____

Major

- Data Science Major (https://catalog.washcoll.edu/catalog/departments-programs/mathematics-computer-science/data-science-major/)
- Mathematics Major (https://catalog.washcoll.edu/catalog/departments-programs/mathematics-computer-science/mathematics-major/)

Minor

- Computer Science Minor (https://catalog.washcoll.edu/catalog/departments-programs/mathematics-computer-science/computer-science-minor/)
- Data Science Minor (https://catalog.washcoll.edu/catalog/departments-programs/mathematics-computer-science/data-science-minor/)
- Mathematics Minor (https://catalog.washcoll.edu/catalog/departments-programs/mathematics-computer-science/mathematics-minor/)

Certificate

- Secondary Education Certification Program (https://catalog.washcoll.edu/catalog/departments-programs/education/secondary-education-certification-program/)