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# B.S. in Computer Science

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## Computer Science at SBU

Computer Science is one of the most dynamic departments on campus. Thanks to a combination of external grants, generous donations from alumni, strong support from the university's administration, a talented, dedicated faculty, and an exceptional group of undergraduates, we offer a first-class computer science education supported by state-of-the-art equipment. In addition, our cybersecurity program overlaps well and has its foundation in computer science, allowing many students to minor or double major in these two related fields.

## Career Opportunities

The computer science major prepares students for entry-level software engineering, networking, database management, and user experience positions, as well as for advanced study at the graduate level.

**Nearly every graduate has obtained a position immediately upon graduation** as a computer professional in areas such as software engineering, database application development, web development, security management, network administration, and user support. Faculty help to place students and many graduates are hired by alumni working in industry.

Graduates have begun careers with employers such as Booz Allen Hamilton, Cutco, Dresser-Rand, HSBC, Goldman Sachs, IBM, L-3 Communications, Lockheed Martin, Microsoft, Nationwide Insurance, Oracle, and Paychex. Our faculty, along with the SBU Career and Professional Readiness Center, help students with internships and employment opportunities. Recent SBU graduates who majored in computer science have enrolled in graduate programs at University at Buffalo, Carnegie Mellon University, Rensselaer Polytechnic Institute, Rochester Institute of

Technology, University of Arizona, and University of Rochester.

## Computer Facilities

Located in the William F. Walsh Science Center, the department maintains two laboratories for computer science students, who have 24-hour access to both.

The department is committed to the Windows and Linux platforms. Java is used for the laboratory component of the first two courses, and students have opportunities to develop in other languages such as C, C++, scripting languages, and Python. Eclipse is the primary platform for application development.

## Internships, Work Opportunities

Students earn 3 credits for an internship during which they work in either (a) an industry setting under the supervision of a computer professional or (b) a community-based nonprofit organization under the supervision of a faculty member. Students who complete an internship often receive a job offer.

There are employment opportunities on campus for computer science majors and many students take advantage of these. On-campus opportunities include PC support specialists, computer lab assistants, and web page designers for various academic and administrative offices, web and network administrators for the Computer Science Department, lab teaching assistants for computer science faculty, and faculty summer research assistants. Positions involving PC support, network support, and application development are available off campus with several local businesses.



# B.S. in Computer Science

## Dedicated Faculty

**Each Computer Science faculty member is first and foremost a dedicated teacher** who enjoys the close contact with students afforded by class sizes of 15 to 20 students. All of the faculty are active in regional and national computer organizations and have published widely in the area of computer science and cybersecurity.

Our computer science faculty have published numerous articles, textbooks, and received National Science Foundation grants. With the addition of practicing professionals, the program faculty provide breadth and depth in foundational as well as emerging areas of computer science.

**Each of the faculty regularly supervises students in independent research projects.** Current areas of undergraduate research include mobile, application development for Android and iOS platforms, computer security, data science, machine learning, and wireless sensor networks.

## Preparation for the Program

There are two starting points for the computer science majors jumping into programming intensive courses or starting from broader issues of study in computer science. You need not have taken computer programming in high school: The first courses in the major curriculum presuppose no programming experience. You should have completed four years of high school mathematics and at least two years of science.

Students may receive advanced placement by taking the Advanced Placement Computer Science exam or by taking the Advanced Placement Computer Science exam or by taking college-level computer science classes. You will be placed appropriately during orientation.

## Requirements: B.S. in Computer Science

A student majoring in computer science takes 10 courses in computer science and three mathematics courses in addition to foreign language and general university requirements.

Computer Science	Credits
CS/CSL 101*	4
CS/CSL 131. Computer Science I	4
CS/CSL 132. Computer Science II	4
CS/CSL 231. Computer Organization	4
CS/CSL 234. Programming Methodologies	4
CS 331. Principles of Program Languages	3
CS 333. Algorithms and Data Structures	3
CS 490. Software Engineering	3
CS 491. Computer Science Internship	3
Three computer science electives	9-12
Standardized exam for Comp. Sci.	0
Mathematics	10
Foreign Language	3
General Education Requirements	34
General Electives	33-36
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	120

*\*This course counts as an elective if taken before CS 131*

For more Information about computer science at St. Bonaventure, please contact the department chair, Dr. Anne Foerst, at [afoerst@sbu.edu](mailto:afoerst@sbu.edu) or (716) 375-2245. Visit us on the web at <http://www.sbu.edu/cs>