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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, 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, Wegmans, IBM, Ford, 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 three laboratories for students, who have 24-hour access.

A virtual lab environment allows students to have 24/7 access to virtual machines to test and deploy services for classes and research.

The department leverages all major operating systems in courses (Windows, OS X, Linux). Java is used for the laboratory component of the first two courses, and Python is covered in the third course.

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.



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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 user experience design, computer security, data science, and machine learning.

Preparation for the Program

You do not need to have taken computer programming in high school: the first course in the major curriculum presupposes 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 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.

Three CS tracks are available to students:

- Software Design & Development
- Networks & Systems Administration
- Artificial Intelligence

Computer Science

	<i>Credits</i>
CS/CSL* 101 Beauty & Joy of CS	3-4
CS/CSL 131. Object Oriented Programming	4
CS/CSL 132. Algorithms & Data Structures	4
CS/CSL 133. Introduction to Python	4
CS 241. Computer, Society & Ethics	3
CS/CSL 243. Database & Big Data	4
CS/CSL 334. Computer Organization	4
CS 401. Research Methods	2
CS 402. Research Presentation	1
CS 491. Computer Science Internship	3
Three computer science electives	12
Three courses in a CS track	12
Mathematics	9
Foreign language	6
General Education requirements	37
General electives	10
	<hr/> 120

**Lab is only required if you do not have programming experience*

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