



B.S. IN CYBERSECURITY

PREPARE FOR YOUR CAREER AS A CYBERSECURITY PROFESSIONAL

Cybersecurity is a dynamic field that offers students the opportunity to use their education to detect, investigate, and prevent technology related crimes.

Merging the strengths of the St. Bonaventure Department of Computer Science and Hilbert College Department of Computer Security and Information Assurance, the Bachelor of Science in Cybersecurity degree prepares students with the sophisticated tools necessary to pursue careers in computer crime investigation, information assurance, and digital forensics.

PROGRAM HIGHLIGHTS

- **Career Advantage:** Emphasis in both the technical and managerial sides of the cybersecurity field prepares students for careers in business, government, and law enforcement.
- **Integrated Ethics:** Ethics content is integrated at all levels of the curriculum to prepare students for the challenges of technology leadership.
- **Small Class Size:** 11:1 student to faculty ratio.
- **Hands-On:** Students gain practical, hands-on experience with the latest hardware and systems.
- **Flexibility:** Courses shared between St. Bonaventure and Hilbert College will be offered via Lifesize conferencing technology, whereby students on one campus will use this distance-learning technology to attend a course as it is being taught on the other campus. There is no need to travel between schools.
- **Innovative Curriculum:** The SBU/Hilbert College cybersecurity degree is the only regional program of its kind.
- **Expert Faculty:** Program faculty include accomplished professors of cybersecurity and computer science as well as those with professional industry experience.
- **Industry Standard:** Cybersecurity students gain the knowledge required to pass industry recognized cybersecurity certifications such as the ComptTIA Network+, ComptTIA Security+ and Certified Ethical Hacker (CEH) and various CISCO examinations. The Department of Cybersecurity is a CISCO and EC Council Academy. Through partnerships with these professional bodies our students are eligible for discounts and gain access to online training material.
- **Pathway into Master of Cybersecurity:** Graduates of the program have the option of continuing their studies in our master's program and strengthening their skills in offensive, defensive and enterprise security, as well as machine learning and data mining, as applied to cybersecurity.
- **Work in Western New York Cybersecurity Research Center as well as the Security Operations Center (SOC):** St. Bonaventure is the home of the WNY Cybersecurity Center and a student operated SOC, which afford students the opportunity to gain valuable knowledge and experience.
- **Earn a double major:** Students may graduate with majors in both cybersecurity and computer science by completing the requirements for each program.
- **Take graduate courses:** Students are allowed to take graduate courses from our Master of Cybersecurity Program (maximum 2 courses with departmental approval).



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CYBERSECURITY CAREERS

Cybersecurity jobs are in high demand. At St. Bonaventure, students are prepared for high-paying careers including:

- Intelligence analyst
- Computer crimes special investigator
- Information assurance specialist
- Credit card fraud investigator
- Health insurance special investigator
- Money laundering analyst
- Network administrator
- Bank security compliance officer
- Compliance, risk management and fraud supervisor
- Digital forensics examiner.

WHY CYBERSECURITY?

Average starting annual salary of \$95,700 for information assurance specialists. *CNN/Money*

Demand for cybersecurity experts is expected to rise to 6 million globally by the end of 2019, with a projected shortfall of 1.5 million (*Michael Brown, CEO at Symantec*). This is expected to increase to 3 million by 2021.

Security analyst ranked third among the best technology jobs, eighth among the top 100 professions and 15th among the highest paying jobs. *U.S. News & World Report*

Between 2012 and 2022, information security analyst positions will grow at a rate of 37%. *Bureau of Labor Statistics*

REQUIREMENTS

NOTE: Courses below with “Hilbert” in parentheses are taught by faculty at Hilbert College and offered

to students at St. Bonaventure via distance-learning technology. The cybersecurity major does not require travel to the Hilbert campus.

Cybersecurity	<i>Credits</i>
CS/CSL 131. Computer Science I	4
CYB102. Ethical & Professional Skills in Cybersecurity	4
CSIA. 101. Intro to Information Security (Hilbert)	3
CS/CSL 231. Computer Organization	4
CS/CSL 254. Computer Networks	4
CS/CSL 354. Introduction to Network Security	4
ECI 333. Information Security (Hilbert)	3
ECI 355. Computer Crime (Hilbert)	3
CS/CSL 490. Software Engineering	3
CS 491. Internship in Comp Sci/Cybersecurity	3
Two Cybersecurity electives*	6-8
Mathematics	7
Foreign Language**	3
General Education Requirements	34
General Electives	<u>33-35</u>
	120

* The two cybersecurity electives must be taken from the following: CS/CSL 243, CS 255, CS/CSL 346, ECI 360 (Hilbert), ECI 365 (Hilbert), CYB380B, ECI 410 (Hilbert), CS 492, SOC 325, any 2 graduate courses from CYB501-CYB510.

** The School of Arts and Sciences requires all majors to complete a foreign language course at the 202 level or higher. Students not prepared to begin at this level will need to take additional courses in the language, which count as general electives.

FOR MORE INFORMATION about cybersecurity at St. Bonaventure, please contact the department chair, Dr. Hossein Sarrafzadeh, at asarrafz@sbu.edu or 716-375-2089. Visit us on the web at <http://www.sbu.edu/cybersecurity>.