ST. BONAVENTURE
UNIVERSITY
ONLINE

MASTER OF SCIENCE
CYBERSECURITY
ONLINE PROGRAM GUIDE

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ABOUT
ST. BONAVENTURE UNIVERSITY

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WORLDS DIFFERENT

ST. BONAVENTURE UNIVERSITY ONLINE OFFERS MORE THAN CREDENTIALS ON A RÉSUMÉ;

It provides an opportunity for busy adults to improve their lives and the lives of others through an active, compassionate, ethical, skilled and dedicated online educational community.

WHY SBU ONLINE?

ENJOY EXTRAORDINARY SUPPORT, CONVENIENCE AND VALUE.

You want an excellent education that aligns with your values from an accredited university with a great reputation. You want a flexible program you can complete 100% online.

Welcome to St. Bonaventure University Online, where you can enjoy the convenience and flexibility of an accredited online curriculum rooted in intellectual, spiritual and personal growth.
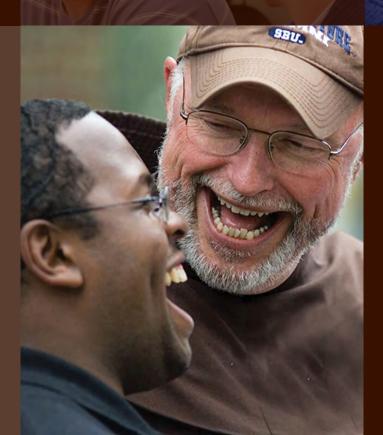
A DIFFERENT KIND OF VALUE

A DIFFERENT KIND OF PROFESSOR

Our professors are passionate about their subject areas and dedicated to making connections with their online students.

A DIFFERENT KIND OF COMMUNITY

We develop students into leaders, a hallmark of our programs. Our experiential curriculum can be completed 100% online from anywhere in the world.

- Ranked a *U.S. News & World Report* "Best College"
- Ranked a *U.S. News & World Report* "Best Value School"
- Ranked *Kiplinger's Personal Finance* "Top 300 Best College Values"
- Ranked **"Best 382 Colleges"** by *The Princeton Review*

AACSB ACCREDITED

▸ **One of only 5% of business schools worldwide** accredited by the Association for the Advancement of Collegiate Schools of Business.

ST. BONAVENTURE UNIVERSITY
HISTORY, MISSION AND VISION

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OUR HISTORY

Founded in 1858 in the interest of promoting Catholic-Franciscan education, St. Bonaventure University continues to pursue academic excellence through personalized attention that reflects the Franciscan tradition of valuing human relationships. St. Bonaventure University has expanded greatly during more than 150 years of existence.

In 1854 the two promoters persuaded a group of friars from Italy to venture to America and establish a Catholic college and seminary in Western New York. Principal among these Franciscans was Fr. Pamphilus da Magliano, who later became the College's first President.

On Oct. 4, 1858, the Feast of St. Francis, the formal dedication of the new school was held on the tract of land donated by Devereux. It was then that the College was named after St. Bonaventure of Bagnoregio, the Patron of Franciscan Studies and Learning. St. Bonaventure College held its first Commencement Exercise in June 1860, graduating a class of 15 students. Since then the University has grown to roughly 2,200 students.

The College was provisionally chartered on March 1, 1875, by an Act of the Regents of the State of New York, "For the instruction … in the learned languages and in the liberal and useful arts and sciences." In the 1920s the College developed a full-time graduate program which has continually expanded since that time. Early in this century St. Bonaventure also became home to the School of Franciscan Studies and the Franciscan Institute. The permanent Charter of Incorporation of the College was granted by the State in 1883, and in 1950, after nearly a century of operation, St. Bonaventure was named a University by the Board of Regents.

MISSION AND VISION

Founded in 1858, St. Bonaventure is a Catholic university dedicated to educational excellence in the Franciscan tradition. We are committed to the constant pursuit of distinction in our undergraduate and graduate programs, our innovative liberal arts core and all of our courses of study. At St. Bonaventure University, we come to know our students on an individual basis and become their mentors. We strive to bring out the best in every individual. As an academic and spiritual community, we endeavor to prepare our students for the challenges they will face in their professional careers as well as in their personal lives. True to our Franciscan heritage, we encourage students to manifest our values through lives of citizenship and service.

ST. BONAVENTURE UNIVERSITY

CYBERSECURITY
ONLINE MASTER OF SCIENCE PROGRAM

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ONLINE MASTER OF SCIENCE
CYBER-SECURITY

SECURITY IS EVERYTHING

The St. Bonaventure University Online Master of Science in Cybersecurity program prepares you with the real-world skills required to develop and lead cybersecurity initiatives in any industry, anywhere in the world. Get hands-on as you expand your skillset, prepare for certification and redefine your career on the forefront of business and technology.

ONLINE MASTER OF SCIENCE

CYBER-SECURITY

A ONE-OF-A-KIND CONNECTION

Through our partnership with the WNY Cybersecurity Research Center and the Security Operations Center located on campus St. Bonaventure University, the program brings current cybersecurity business, research and active industry professionals into the learning experience. It's an immersive and one-of-a-kind connection that allows you to become part of global cybersecurity practice as it happens — in real time. It's our unique advantage in preparing you for the realities of cybersecurity like no other online program can.

A HANDS-ON APPROACH THAT DEVELOPS REAL-WORLD CYBERSECURITY SKILLS

The St. Bonaventure University Online Master of Science in Cybersecurity program combines a cutting-edge curriculum and immersive, hands-on learning opportunities. As a result, you'll develop much more than theoretical knowledge. You'll build immediately implementable and practical cybersecurity skills in essential areas including risk management, machine learning, secure software design, computer and enterprise networking, data mining, cryptography, penetration testing, cybercrime, cybersecurity forensics and ethics.

PREPARE FOR CERTIFICATION

St. Bonaventure University is a partner with the EC-Council and CISCO Academy. The Online Master of Science in Cybersecurity helps you prepare for many certifications including:

- Certified Ethical Hacker (C|EH)
- Certified Network Defender (C|ND)
- CISCO CCNA
- CCNP Security

ONLINE MASTER OF SCIENCE
CYBER-SECURITY

FOR JOB SECURITY,
CHOOSE CYBERSECURITY

Cybersecurity is a rapidly growing field worldwide. The number of daily cyberattacks in the United States alone continues to rise dramatically as networked devices and the Internet of Things (IoT) becomes more common in businesses and homes. As a result, cybercrime will more than triple the number of job openings for trained cybersecurity professionals in the next five years.

LEARN THE SKILLS THAT MATTER

Graduates of the St. Bonaventure University Online Master of Science in Cybersecurity will be able to:

- Demonstrate and maintain cutting-edge cybersecurity skills based on industry standards
- Engage in an ethical and professional manner while solving and handling IT vulnerabilities
- Identify potential threats, risks, and vulnerabilities in an organization
- Use quantitative and qualitative data to solve enterprise security problems
- Gather and process and analyze large amounts of data
- Use data analytics and machine learning in an organization's cybersecurity context
- Assess information and solve problems based on critical and analytical thinking
- Engage in industry related opportunities and demonstrate effective communication skills to address IT vulnerabilities
- Understand the ethical ramifications of data breaches for society

ONLINE MASTER OF SCIENCE
CYBER-SECURITY

ADMISSIONS REQUIREMENTS

- ▶ A completed application
- ▶ Minimum 2.5 GPA
- ▶ Resumé
- ▶ A baccalaureate degree in computer science, cybersecurity, or a similar/relevant field (may require a foundational course) from an accredited college or university
- ▶ Transcripts from all institutions attended
- ▶ No GRE/GMAT required

PROGRAM DETAILS

The St. Bonaventure Online Master of Science in Cybersecurity is a 30-credit graduate level program that you can complete in as few as 18-months. Courses are seven-weeks long and geared towards expanding your knowledge of cybersecurity through real-world coursework, cloud-based labs and direct interactions with our faculty of active cybersecurity experts. It is an engaging and immersive learning experience that leverages the active research, live projects and professional connections of the WNY Cybersecurity Research Center and the Security Operations Center (SOC) at St. Bonaventure University. The result is a one-of-a-kind learning experience that prepares graduates to become certified, lead cybersecurity initiatives and innovation across the globe.

ONLINE MASTER OF SCIENCE
CYBERSECURITY CURRICULUM

▶ **CYB 500 | COMPUTER NETWORKS**
A study of computer networks based on the OSI model of a layered network architecture. The TCP/IP protocol suite is used to illustrate network protocols. The course includes an overview of local area networks, routing algorithms, and network applications. The course consists of three lecture hours and one two-hour laboratory per week. The laboratory component provides experience in network programming using sockets.

▶ **CYB 501 | FOUNDATIONS OF CYBERSECURITY, ETHICAL HACKING, PENETRATION TESTING**
To provide students with a fundamental understanding of cybersecurity and an in-depth understanding of penetration testing and ethical hacking. This course will include intelligence gathering, assessment of software vulnerabilities and weaknesses, cross-platform penetration testing, learning ethical hacking requirements, and data protection.

▶ **CYB 502 | ADVANCED CYBERSECURITY**
This course will expand on previous cybersecurity courses and delve deeper into its topics. Combining topics from computer science and cybersecurity, students will delve into system and network analysis, Diverse DDoS, DDos and advanced persistent attacks, intrusion detection system development and control systems. Students will be able to use quantitative and qualitative reasoning to solve problems with an array of different system vulnerabilities. Students will need knowledge of operating systems and advanced algebra before taking this course.

▶ **CYB 503 | ENTERPRISE SECURITY**
This course will expand on previous cybersecurity courses and introduce business and enterprise topics. This will be done through analysis of real-world business examples of cyberattacks and the needs businesses have in the areas of cybersecurity. This course will emphasize real-world developmental practices and aim to improve students' ability to work in a professional cybersecurity environment.

▶ **CYB 504 | CYBERSECURITY FORENSICS**
This course will give an in-depth look into the world of cybercrime and digital evidence. Throughout this course, students will use industry tools to perform forensic analysis of crimes to learn about how to prevent, detect, and respond to cyber-crime, cyber-terrorism, and cyber-predators. This course aims to both inform students of the types of crimes that exist as well as ways to catch those responsible even through virtual anonymity.

▶ **CYB 505 | SECURE SOFTWARE DESIGN**
This course aims to establish an understanding of proper software design for a secure product. This course will do so by comparing both secure and unsecure software design structures to ensure that similarly made software programs are not vulnerable to known forms of cyberattacks or cybercrimes.

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▶ **CYB 506 | ENTERPRISE NETWORKS**
This course will build an understanding of how networks function within a business environment and the threats that face networks if they are not properly protected. Networks are a cornerstone to a modern business of any size, and thus these networks must be made to be secure in order to ensure that these companies can function properly.

▶ **CYB 507 | APPLIED CRYPTOGRAPHY**
This course will help students understand the fundamentals of cryptography as well as the applications that it holds in modern technology. Cryptographic methods and tools, such as encryption and digital signatures, will be studied to understand how to protect information within a program. This course will also explore the differences between symmetric and asymmetric cryptography and the benefits to both.

▶ **CYB 508 | APPLIED DATA MINING WITH APPLICATIONS IN CYBERSECURITY**
This course will help students understand the importance of data mining in the cybersecurity field and how to apply various data mining techniques. Students will learn about the fundamentals of data mining in general, growing their skills until they are able to later integrate data mining into cybersecurity applications and topics.

▶ **CYB 509 | MACHINE LEARNING WITH APPLICATIONS IN CYBERSECURITY**
This course will aim to enhance students' knowledge of the fundamentals of machine learning and how said technologies can be applied to cybersecurity. Different types of machine learning will be explored in the realms of cybercrime and cybercrime prevention.

▶ **CYB 510 | RISK MANAGEMENT AND SYSTEM HARDENING & PROTECTION**
This course will aim to teach students the skills required to perform cyber risk management for organizations as well as how to prevent systems from being breached to begin with. There are risks that accompany all forms of system; this course will both give students the tools to identify possible risks that can be impactful in the future and how to manage breaches once they occur.

APPLY NOW

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Speak to an Enrollment Advisor ⊘ 1-844-424-5114

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