



The **Bachelor of Science** in

Cybersecurity, Computer Science Emphasis

Protect and secure data.

Cybersecurity affects everyone – including individuals, organizations, governments and society at large. Despite this, industry reports indicate a shortage of qualified professionals to fill cybersecurity-related roles. Demand for professionals who can help secure data, information technology assets and the nation's critical infrastructure continues to grow. Those with training in modern cybersecurity techniques and methods are highly sought-after by employers across industries.

The Bachelor of Science in Cybersecurity, Computer Science Emphasis

The BS in Cybersecurity, Computer Science Emphasis provides a deeper technical and mathematical focus and is suitable for students interested in technical cybersecurity roles in industry and government. It blends technical- and business-oriented skills designed to prepare students for a variety of cybersecurity and IT related careers.

The core coursework includes business or technical writing, introduction to computing, programming and data structures, object-oriented programming, computer organization and architecture, Linux environment and programming, introduction to information security or cyber threats and defense, secure software development, information security risk management and business continuity, computer forensics and introduction to cryptography for computer security, while the emphasis courses are focused on preparation for the more technical aspects of cybersecurity.

Upon completion of the program, graduates will be able to understand and describe the confidentiality, integrity and availability security objectives and key security principles that enable the development of security mechanisms; demonstrate an understanding of physical, data link, network, transport and application layers of data networking and identify potential information security pitfalls at each layer; describe important secure software development principles and common web application security vulnerabilities; describe common applications of cryptographic, network, application and systems security defense mechanisms to improve information security; and understand the role of systematic information security risk management in fostering information security within organizations and the role of management and control frameworks such as NIST Special Publications and ISO 27000 series standards in doing so.

Enhance your experience by joining UMSL's Information Technology and Cybersecurity Club, which engages students in national competitions like the Collegiate Cyber Defense Competition, hosts cyber clinics as well as guest presentations on cybersecurity tools.

Transforming Lives

The Bachelor of Science in Cybersecurity, Computer Science Emphasis at UMSL is earned through our College of Arts and Sciences, the academic core of the University of Missouri–St. Louis. Through academic programs offered on- and off- campus, traditional and nontraditional students gain knowledge, skills and intellectual leadership for a variety of career paths, advanced study and research in many academic disciplines.

Graduates are known for their professionalism on the job and their strong sense of civic responsibility. Students in our programs engage in creative and critical thinking, learn to analyze evidence, to appreciate patterns of complexity and to reflect on important issues that impact our daily lives. Students gain skill sets to prepare for a changing workplace that requires flexible, dynamic and well-educated employees.

Center for Excellence

UMSL is designated as a National Center of Academic Excellence (CAE) in Cyber Defense Education by the National Security Agency (NSA) and the Department of Homeland Security (DHS). The CAE designation is awarded to universities meeting the highest standards of cybersecurity education and provides students opportunities to access industry and government scholarships, career fairs specifically designed for CAE schools and to apply one year towards a typical five-year work requirement for industry certifications. Students learn hands-on in our state-of-the-art Cybersecurity and Information Technology Innovation Lab.

Serious education. Serious value.

The Bachelor of Science in Cybersecurity, Computer Science Emphasis is designed to provide specialized knowledge, skills and training in a flexible format, with classes available in-person, online and in a hybrid format. You'll learn from highly qualified educators and researchers who hold terminal degrees from some of the world's most prestigious academic institutions.

The University of Missouri–St. Louis provides the knowledge, resources, tools, skills and support students need to be successful in our programs. Our comprehensive student support services include workshops, tutoring and career services to help you develop skills and strategies to be successful in the classroom and beyond. UMSL welcomes transfer students and our transfer specialists will assist you with getting the most transfer credits possible. We're also committed to increasing access to higher education, and as such, UMSL is consistently ranked number one in affordability in the St. Louis region.

Learn more at umsl.edu/cs

The University of Missouri–St. Louis is the largest public research university located in Missouri's most populous and economically important region. UMSL provides high-quality, affordable education to one of the most diverse student bodies in the state. No university is better connected to the surrounding region than UMSL. Seventy-three percent of our graduates stay in St. Louis. The metropolitan region needs a workforce well-equipped with cybersecurity skills and UMSL is prepared to help you meet those needs. Choose the University of Missouri–St. Louis for cybersecurity.

Career Opportunities

Cloud Security Specialist
Cyber Defense Analyst
Cyber Defense Incident Responder
Cybersecurity Awareness and Training Analyst
Cybersecurity Engineer
Cybersecurity Forensics Analyst
Cybersecurity Risk Management Analyst
Information Security Analyst
Security Architect
Vulnerability Assessment Analyst

College of Arts & Sciences

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