Graduate Studies

MS: Cybersecurity

HARRISON COLLEGE OF BUSINESS AND COMPUTING

Cybersecurity

SOUTHEAST MISSOURI STATE UNIVERSITY · 1873®

Master of Science (MS)

The Master's in Cybersecurity degree at Southeast focuses on developing a highly skilled Cybersecurity workforce with specialization in the area of critical infrastructure as defined by the Department of Homeland Security (DHS).

The Department of Homeland Security (DHS) designated 18 industries as critical infrastructure. This categorization reflects the fact that the compromise of any of these industries could pose significant threats to the well-being of the nation or human life. Critical infrastructure therefore forms the backbone of the nation's economy. DHS recognizes a major shortfall in highly trained Cybersecurity professionals this area of critical infrastructure.

The Master's program at Southeast thereby addresses this need of training new graduates, as well as retrain existing practitioners with the skills required to protect the nation's critical infrastructure. From classroom lectures to hands-on experience in the world of cybersecurity, we will prepare students for careers in the industry. Students will have an opportunity to take courses in computational cryptography, introduction of cybersecurity, information security in system administration, and security of critical infrastructure.

The program requires 30 credit hours and offers the flexibility for students to choose from a wide range of electives. The thesis and project options are available.

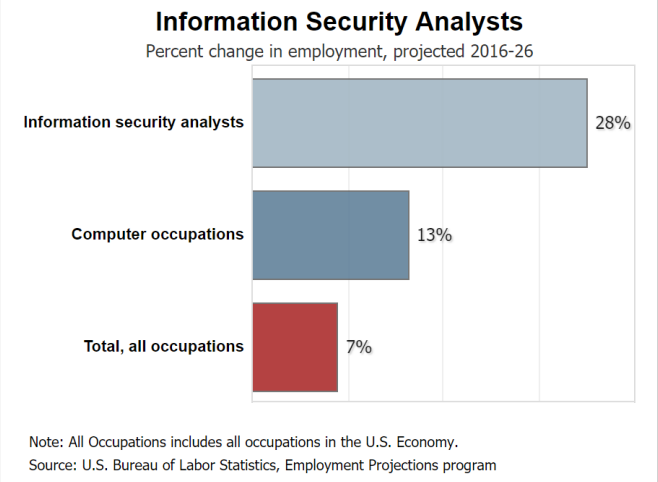
Becoming Career Ready...

/ The program open doors to better cybersecurity employment opportunities.
/ Students master the most up-to-date cybersecurity technologies.
/ Students receive focused attention from faculty advisors.
/ Students develop critical reasoning and technical writing skills.
/ Students develop professional presentation skills.
/ Students have the opportunity to enter the field without a BS in Computer Science, Cyber Security or a similar degree.
/ Students have increased job security and salary.
/ Students increase confidence, maturity and influence in the workplace.

Career Planning

Graduates from our master's in cybersecurity program will enter the most demanding and rewarding careers in the cybersecurity field.

/New cybersecurity graduates enjoy a hefty salary with a median base pay of $75,000 per year. ~glassdoor.com
/The job outlook for software developers is expected to grow 28% from 2016 to 2026.
~U.S. Bureau of Labor Statistics
/New report from Cybersecurity Ventures estimates there will be 3.5 million unfilled cybersecurity jobs by 2021



Admission Requirements

1. A Bachelor's degree in Cybersecurity or related field*
2. An undergraduate GPA of 3.0 on a 4.0 scale
3. Six complete hours of science and six hours of mathematics in the undergraduate degree

* Students with bachelor's degrees from other fields will be required to take up to two prerequisites related to Fundamentals of Computing and Programming.

To learn more
Office of Admissions
(573) 651-2590
admissions@semo.edu
www.semo.edu

To explore the Harrison College of Business & Computing, visit
semo.edu/business-computing

Graduate Program Coordinator
Dr. Reshmi Mitra
(573) 651-2920
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Degree Guide

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This is a guide based on the 2020-2021 Graduate Bulletin and is subject to change. The time it takes to earn a degree will vary based on factors such as dual enrollment, remediation, and summer enrollment. Students meet with an academic advisor each semester and use Degree Works to monitor their progress

CURRICULUM CHECKLIST

Cybersecurity – 30 Hours Required
Core Requirements
___ CY501 Introduction to Cybersecurity (3)
___ CY520 Information Security in System Administration (3)
___ CY640 Security of Critical Infrastructure (3)
___ CY670 Secure Operating Environments (3)
___ MA664 Computational Cryptography (3)

Choose one thesis option:
Thesis option
___ CY691 Thesis Research I (3)
___ CY692 Thesis Research II (3)
___ GR699 Master's Oral Examination (0)
___ XXxxx Choose 9 hours with advice of advisor (9)
Non Thesis option
___ CY690 Graduate Project (3)
___ GR698 Master's Final Comprehensive Examination (0)
___ XXxxx Choose 15 hours with advice of advisor (15)

Electives may be chosen from the following with the advice of advisor:
CS506 Distributed Cloud Computing (3)
CS560 Computer Architecture (3)
CS634 Machine Learning (3)
CS650 Theory of Computation (3)
CY510 Information Security and Assurance (3)
CY610 Web Application Security (3)
CY620 Computer Forensics (3)
CY630 Hardware Security (3)
CY643 Independent Study (3)*
CY650 Legal, Risk & Compliance for Security (3)
CY653 Special Topics in Cybersecurity (3)*
CY660 Cyber Operations (3)
CY670 Secure Operating Environments (3)
CY699 Internship (3)*
MA510 Mathematical Foundations (3)
XX5xx/6xx Any relevant course from other departments and listed as electives – up to 6 hours
*May be taken once for credit on program

Career Opportunities

- Cybersecurity consultant
- Cybersecurity manager
- Information Security Crime Investigator/Forensics Expert
- Cybersecurity analyst
- System, Network and/or Web Penetration Tester
- Security Architect
- Malware Analyst
- Network Security Engineer
- Vulnerability Researcher/Exploit Developer
- Security Auditor
- Embedded Security Engineer
- Software Security Engineer

Internship Opportunities and Employment of Recent Graduates

- Emerson Electric Company, St. Louis, Mo.
- Enterprise Holding, St. Louis, Mo.
- Accretive Health, Cape Girardeau, Mo.
- Big-River Communications, Cape Girardeau, Mo.
- Sword and Shield, Knoxville, Tenn.

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