

## 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.

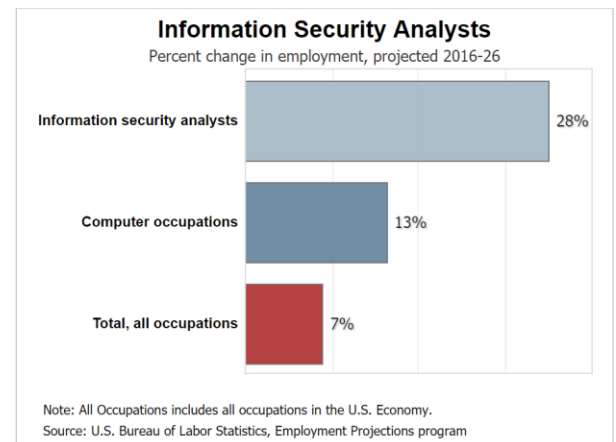
### Becoming Career Ready...

- /Open doors to better cybersecurity employment opportunities
- /Master the most up-to-date cybersecurity technologies
- /Receive focused attention from faculty advisors
- /Develop critical reasoning and technical writing skills
- /Develop professional presentation skills
- /Opportunity to enter the field without a BS in Computer Science, Cyber Security or a similar degree
- /Increase job security and salary
- /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/year. ~ glassdoor.com
- The job outlook for software developers is expected to grow 28 percent from 2016 to 2026. ~ U.S. Bureau of Labor Statistics.
- new report out from Cybersecurity Ventures estimates there will be 3.5 million unfilled cybersecurity jobs by 2021.



### Admission Requirements

1. A Bachelor of Science degree
2. An undergraduate grade point average of at least 3.0 on a 4.0-point scale
3. TOEFL (79)/IELTS (6.0) (Required for international students)
4. 3 Letters of support
5. Online Application and Fee

### Application Deadlines

Fall: August 1 (Domestic) June 1 (International)  
Spring: Nov 21 (Domestic) Oct 1 (International)

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This is a guide based on the 2019-2020 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.