

## Master of Science (MS)

(Face-to-Face & Online Delivery)

The Master of Science in Applied Computer Science program offers a broad range of courses in theoretical computer science, software construction, data analytics, cloud computing, emerging and converging technologies and many more, which provide the much-needed opportunity for the development of a high degree of specialization and critical experience as computer professionals.

Students will further their knowledge through advanced courses in their area(s) of interest. They will enhance their technical and professional skills which are vital in the modern global society. Although tailored for computer science professionals who want to advance their careers and graduate students seeking competitive jobs, the program is designed to engage and prepare students with no background in computer science as well.

### About Our Online Programs

At Southeast, if a program is designated as an online degree, you can complete your degree from anywhere, without ever having to come to one of our campuses. As a student in an online class, your faculty will be the same faculty who teach in our campus classrooms. Advising for online programs and other support services are all completed online by staff who specialize in serving distance students.

### Becoming Career Ready...

/Students master the knowledge of the most up-to-date technologies.

/Students use a wide array of technical skills to develop software applications that demand performance, reliability, and safety standards.

/Students engage in primary and secondary research.

/Students develop critical reasoning and technical writing skills.

/Students develop professional presentation skills.

/Students receive focused attention from faculty advisors.

/Students practice hands-on exposure to a variety of computer systems, tools and techniques.

/Students receive excellent preparation for seeking careers in software-related computing fields.

### Why should I study Applied Computer Science at Southeast?

Faculty in the Applied Computer Science program have Ph.Ds from varied and impressive graduate schools around the United States, and are armed with their unique professional/industrial background. In the tailored program, the students will get personal attention from faculty who will inspire them to nurture creativity as they learn to analyze concerns, devise systems, and troubleshoot problems.

### Career Planning

Graduates from our program will enter the most demanding and rewarding careers in the computing field

/New computer science graduates enjoy a hefty salary with a median base pay of \$70,000/year. ~ glassdoor.com

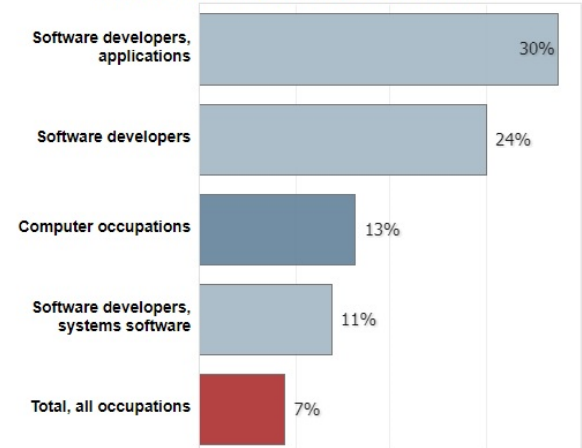
/The job outlook for software developers is expected to grow 24 percent from 2016 to 2026. ~ U.S. Bureau of Labor Statistics.

/The number of job openings for computer science graduates will outpace the number of graduates through 2024.

~ New York Times, November 2017

### Software Developers

Percent change in employment, projected 2016-26



Note: All Occupations includes all occupations in the U.S. Economy.  
Source: U.S. Bureau of Labor Statistics, Employment Projections program

### Admission Requirements

- Bachelor's degree in Computer Science, Computer Information Systems or related field  
\*Students with bachelor's degrees from other fields will be required to take up to 2 prerequisites related to Fundamentals of Computing and Programming (provisional admission).
- Minimum undergraduate grade point average of 3.0 on a 4.0 scale
- Completed at least 6 hours of science and 6 hours of mathematics in undergraduate degree

**To explore the Harrison College of Business & Computing, visit [semo.edu/business-computing](http://semo.edu/business-computing)**

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This is a guide based on the 2021-2022 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

#### 30 Hours Required

##### Core Requirements:

- CY501 Introduction to Cybersecurity (3)
- CS506 Distributed Cloud Computing (3)
- CS591 Advanced Artificial Intelligence (3)
- CS605 Research Methods (3)
- CS609 Advanced Programming Languages (3)
- CS630 Current Topics in Human Computer Interaction (3)

##### Choose one thesis option:

Thesis option - 12 hours

- CS/CY5xx-6xx – choose 6 hours\*
- CS697 Thesis Research I (3)
- CS698 Thesis Research II (3)
- GR699 Master's Oral Examination (0)

Non Thesis option - 12 hours

- CS/CY5xx-6xx – choose 12 hours\*
- CS690 Graduate Project (0)
- GR698 Master's Final Comprehensive Examination (0)

##### Electives may be chosen from the following with the advice of advisor:\*

- CS505 Data Mining (3)
- CS533 Mobile Computing (3)
- CS560 Computer Architecture (3)
- CS575 Advanced Web Development (3)
- CS580 Advanced Robotics
- CS581 Advanced Network Programming (3)
- CS585 Formal Systems & Modeling (3)
- CS603 Introduction to Data Analytics (3)
- CS612 Simulation & Modeling for Computing (3)
- CS631 Advanced Software Engineering (3)
- CS632 Emerging & Converging Technologies & Computing (3)
- CS633 Digital Signal & Image Processing (3)
- CS634 Machine Learning (3)
- CS640 Advanced Database Systems (3)
- CS645 Internet of Things (3)
- CS650 Theory of Computation (3)
- CS653 Special Topics (3)
- CS693 Independent Study (3)
- CS699 Internship (3)
- CY510 Information Security & Assurance (3)
- CY520 Information Security in Systems Administration (3)
- CY610 Web Application Security (3)
- CY620 Computer Forensics (3)
- XX5xx/6xx Any relevant course from other departments and listed as electives – up to 6 hours