

# Computer Science (Cybersecurity), MCS

ESCSEIMCS

ASU is certified by the National Security Agency and the Department of Homeland Security as a National Center of Academic Excellence in Information Assurance Education and a National Center of Academic Excellence in Information Assurance - Research.

## Program description

### **Degree awarded: MCS Computer Science (Cybersecurity)**

The MCS with a concentration in cybersecurity is an advanced degree program designed for graduate students who want to pursue a thorough education in the area of cybersecurity and information assurance; students with an undergraduate education in computing and related disciplines; and students employed in industry who can best profit from further breadth and background in computer science and information assurance.

This concentration program provides students with the knowledge and skills in science and engineering pertaining to cybersecurity, including computer and network security, software security, data and information security, applied cryptography and computer forensics.

According to the National Security Agency, information assurance is defined as the set of measures intended to protect and defend information and information systems by ensuring their availability, integrity, authentication, confidentiality and nonrepudiation. This includes providing restoration of information systems by incorporating protection, detection and reaction capabilities.

Cybersecurity courseware at ASU has been certified by the Information Assurance Courseware Evaluation Program to satisfy the standards for Information Systems Security Professionals (NSTISSI 4011) and Senior Systems Managers (CNSSI 4012).

## At a glance

- **College/School:** [Ira A. Fulton Schools of Engineering](#)

- **Location:** [Online](#)

## Accelerated program options

This program allows students to obtain both a bachelor's and master's degree in as little as five years. It is offered as an [accelerated bachelor's plus master's degree](#) with:

[Computer Science, BS](#)

[Computer Science \(Cybersecurity\), BS](#)

[Computer Science \(Software Engineering\), BS](#)

[Computer Systems Engineering, BSE](#)

[Computer Systems Engineering \(Cybersecurity\), BSE](#)

[Software Engineering, BS](#)

Acceptance to the graduate program requires a separate application. Students typically receive approval to pursue the accelerated master's during the junior year of their bachelor's degree program. Interested students can learn about eligibility requirements and [how to apply](#).

## Degree requirements

30 credit hours and a portfolio

### **Required Core Areas (9 credit hours)**

applications (3)

foundations (3)

systems (3)

### **Concentration (9 credit hours)**

CSE 543 Information Assurance and Security (3)

Choose two:

CSE 539 Applied Cryptography (3)

CSE 545 Software Security (3)

CSE 548 Advanced Computer Network Security (3)

### **Electives (12 credit hours)**

### **Culminating Experience (0 credit hours)**

portfolio (0)

### **Additional Curriculum Information**

Students should see the academic unit for the list of courses approved for each core area in applications, foundations and systems.

Coursework selected as part of the area core may not be used as elective coursework on the same plan of study. Students should check with their academic advisor to ensure that the total credit hours of their plan of study are equal to 30.

The concentration coursework cannot be used as part of the area core on the same plan of study. Students must complete concentration course requirements as listed and complete different coursework for each of the core areas in applications, foundation and systems.

The interactive plan of study must contain a minimum of 30 credit hours of approved graduate-level work. At least 24 of these hours must be CSE 500-level credits at ASU. Up to six credit hours of 400-level courses may be applied to the plan of study. All 30 credit hours must be from formal coursework (including CSE 591). CSE 590 is not allowed as part of the MCS program plan of study.

All Master of Computer Science students must complete a project portfolio from two courses in which the student received a "B" grade (3.00) or higher.

## **Admission requirements**

Applicants must fulfill the requirements of both the Graduate College and the Ira A. Fulton Schools of Engineering.

Applicants are eligible to apply to the program if they have earned a bachelor's or master's degree in computer science, computer engineering or a closely related area from a regionally accredited institution.

Applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in the last 60 hours of their first bachelor's degree program, or applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in an applicable master's degree program.

Applicants must submit:

1. graduate admission application and application fee
2. official transcripts
3. statement of purpose or curriculum vitae
4. proof of English proficiency

### **Additional Application Information**

An applicant whose native language is not English must provide proof of [English proficiency](#) regardless of their current residency.

Students assigned any deficiency coursework upon admission must complete those classes with a grade of "C" or higher (scale is 4.00 = "A") within two semesters of admission to the program. Deficiency courses commonly taken include:

CSE 230 Computer Organization and Assembly Language Programming

CSE 310 Data Structures and Algorithms

CSE 330 Operating Systems

CSE 340 Principles of Programming Languages or CSE 355 Introduction to Theoretical Computer Science

The applicant's undergraduate GPA and depth of preparation in computer science and engineering are the primary factors affecting admission.

## Tuition information

When it comes to paying for higher education, everyone's situation is different. Students can learn about [ASU tuition and financial aid](#) options to find out which will work best for them.

## Attend online

### ASU Online

ASU offers this program in an online format with multiple enrollment sessions throughout the year. Applicants may [view the program's ASU Online page](#) for program descriptions and to request more information.

## Application deadlines

### Fall

**Spring** [expand](#)

**Summer** [expand](#)

[expand](#)

## Career opportunities

Students completing the Master of Computer Science program are able to analyze key theories, algorithms and software modules used in the field of computer science. Graduates have a competitive advantage in securing employment.

Career examples include:

- computer network architect
- computer system security analyst
- computer systems engineer
- data scientist or engineer
- machine learning, AI or computer vision engineer
- software developer
- software engineer

## Contact information

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