Computer Science (Big Data Systems), MCS

ESCSEBDMCS

Help meet the growing need for data scientists and engineers who can architect, implement and manage large data systems. Learn the skills that will give you a competitive advantage in securing employment.

Program description

Degree awarded: MCS Computer Science (Big Data Systems)
This concentration within the MCS degree program is designed for graduate students who want to pursue a thorough education in the area of big data systems.

Students acquire the knowledge, skills and expertise needed to design scalable systems (parallel, distributed and real time) that acquire, store, process and access large-scale heterogeneous multisource data, and they learn to use analytical tools to mine information from the data.

Graduates are able to choose and deploy the appropriate data management processing and analysis systems with a suitable structured or unstructured data model that a particular task and domain application needs.

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 511 Data Processing at Scale (3)
CSE 575 Statistical Machine Learning (3)
CSE 578 Data Visualization (3)

Restricted Electives (6 credit hours)

Electives (6 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 electives and 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 number of credit hours of their plan of study is 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, foundations and systems.

At least 24 of these hours must be CSE 5XX credits at ASU. A maximum of four CSE 598 courses may be allowed as elective coursework. 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. CSE 590 is not allowed as part of the MCS program plan of study.

All Master of Computer Science program students must complete a project portfolio based on two courses in which the student received a grade of "B" (scale is 4.00 = "A") 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 they 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" (scale is 4.00= "A") or higher within two semesters of admission to the program. Deficiency courses 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

Graduates who complete the Master of Computer Science program are able to analyze key theories, algorithms and software modules used in the field of computer science.

Career examples include:

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

Contact information

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