Software Engineering, MS

TSSERMS

Learn to apply new technologies in software engineering to solve interdisciplinary problems and improve quality of life.

Program description

Degree awarded: MS Software Engineering
The MS program in software engineering focuses on students' development of advanced knowledge and abilities in the design and application of software.

This unique Master of Science program involves the application of engineering principles to software development, including design methodologies, operation principles, and maintenance and testing approaches. Students learn to solve issues through engaging projects, commonly as a member of a development team. The program develops students' professional skills in this discipline and provides opportunities for them to engage in and develop research abilities.

At a glance

- **College/School:** Ira A. Fulton Schools of Engineering
- **Location:** Polytechnic

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:

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 thesis, or
30 credit hours including the required capstone course (SER 517)

Required Core (9 credit hours)
SER 501 Advanced Data Structures and Algorithms (3)
SER 502 Emerging Languages and Programming Paradigms (3)
SER 515 Foundations of Software Engineering (3)

Electives (15 or 18 credit hours)

Culminating Experience (3 or 6 credit hours)
SER 517 Software Factory Capstone (3) or
SER 599 Thesis (6)

Additional Curriculum Information
Students should see the academic unit for a list of approved electives.

For the culminating experience, students have the choice of completing the capstone course (SER 517) or a thesis (SER 599). Completion of 30 credit hours of coursework is required for all culminating experience options.

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 information technology, computer science, applied computing, engineering or a closely related field from a regionally accredited institution (or international equivalent).

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 a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in an applicable master's degree program.

All applicants must submit:

1. graduate admission application and application fee
2. official transcripts
3. personal statement
4. proof of English language proficiency

Additional Application Information
An applicant whose native language is not English must provide proof of English proficiency regardless of their current residency. More information is available on the admission services website.

If the student is assigned any deficiency coursework upon admission, those classes must be completed with a grade of "B" (3.00) or higher within two semesters of admission to the program. Deficiency courses include:

CSE 240 Introduction to Programming Languages
CSE 360 Introduction to Software Engineering
SER 222 Design and Analysis of Data Structures and Algorithms or CSE 310 Data Structures and Algorithms
SER 334 Operating Systems and System Programming or CSE 330 Operating Systems

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.

Application deadlines

Fall

Spring

expand

expand

Program learning outcomes

Program learning outcomes identify what a student will learn or be able to do upon completion of their program. This program has the following program outcomes:

- Apply engineering principles to software projects, including design methodologies, evolutionary development, and requirements-driven improvement. (Technical Competence)
- Develop advanced knowledge and abilities in the design and application of software. (Design)
- Demonstrate professionalism in engineering situations and apply software engineering perspective for producing quality software systems. (Professionalism and Perspective)

Career opportunities

Graduates are able to design and engineer innovative systems that may include mechanical and electrical components that interact with software. They are prepared for advanced study in computing or in an allied field, or to enter the computing profession, most commonly as an application software engineer.

According to the Bureau of Labor Statistics, software engineers are highly paid, and there is significant growth in the number of employment opportunities. Software engineering jobs may include:

- creating applications for mobile devices
- creating web applications
- designing, creating and validating software for avionics, robotics and similar systems fields

Contact information

Software Engineering | PICHO 245
SCAI.Grad.Admission@asu.edu | 480-965-3199