Software Engineering, MS

TSSERMS

Program Description

Degree Awarded: MS Software Engineering
The MS program in software engineering focuses on developing advanced knowledge and abilities in the design and application of software. The program involves the application of engineering principles to software development, including design methodologies, operation principles and maintenance and testing approaches.

The Master of Science program builds upon the BS program in software engineering and is aimed at developing students' professional skills in this discipline as well as providing opportunities for them to engage in and develop research abilities.

At a Glance

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

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 and master's degree with:

Software Engineering, BS

Acceptance to the graduate program requires a separate application. During their junior year, eligible students are advised by their academic departments 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 (15-18 credit hours)**

**Culminating Experience (3 or 6 credit hours)**
SER 517 Software Factory I (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.

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

All applicants must submit:

1. graduate admission application and application fee
2. official transcripts
3. GRE test scores
4. three letters of recommendation
5. personal statement
6. proof of English language proficiency
**Additional Application Information**

An applicant whose native language is not English must provide proof of English proficiency regardless of current residency.

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 Networks OR CSE 330 Operating Systems

**Application Deadlines**

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**Career Opportunities**

Software engineers solve a broad set of transdisciplinary problems and apply new technologies to improve the quality of life.

This master's degree is a unique program in which students learn by solving engaging projects, commonly as a member of a development team. The program prepares graduates for advanced study in computing, an allied field, or to enter the computing profession (most commonly as an application software engineer). Graduates design and engineer innovative systems that may include mechanical and electrical components that interact with software.

According to the Bureau of Labor Statistics, software engineers are highly paid and there is significant growth in the number of employment opportunities. Some 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**

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