Computer Engineering (Computer Systems), PhD

ESCENCPHD

Develop a unique combination of computer science and electrical engineering skills.

Program description

Degree awarded: PHD Computer Engineering (Computer Systems)
The PhD program in computer engineering is a transdisciplinary program that builds on the fundamentals of computer science, electrical engineering, applied mathematics and physical sciences. Students can take courses and participate in projects across two schools and among the core areas.

The program in computer engineering with a concentration in computer systems is intended for students with excellent ability in mathematics and physical science who are interested in gaining an in-depth knowledge of the foundational principles of engineering and wish to pursue a career in academia, research or highly technical entrepreneurial innovation.

This doctoral program provides broader and more in-depth preparation than the MS programs, in anticipation of a demonstrated ability to independently pursue more creative and substantive innovation with higher impact.

At a glance

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

Degree requirements

84 credit hours, a written comprehensive exam, an oral comprehensive exam, a prospectus and a dissertation

Required Core (6 credit hours)
CSE 551 Foundations of Algorithms (3)
EEE 554 Probability and Random Processes (3)

Concentration (9 credit hours)

Focus Area Electives (3 credit hours)

Technical Electives (30 credit hours)

Research (24 credit hours)
CEN 792 Research (24)

Culminating Experience (12 credit hours)
CEN 799 Dissertation (12)

Additional Curriculum Information
Concentration, focus area and technical elective courses are selected in consultation with the academic unit.

The concentration and focus area course lists are located on the computer engineering website, and students need to meet the following requirements: at least nine credit hours of graduate-level coursework in computer engineering (CEN) or computer science (CSE), and at least three credit hours of graduate-level coursework in electrical engineering (EEE) or computer engineering.

This program requires a qualifying exam. Students should see the academic unit for information on timeline and satisfactory progress standards.

Students may apply up to 30 credit hours from a previously awarded master's degree toward their doctoral interactive plan of study with approval of the program and supervisory committee and the dean of the Graduate College.

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 degree (or equivalent) or a graduate degree from a regionally accredited institution of recognized standing in a related field such as computer engineering, computer science, computer systems engineering or electrical engineering.

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.

All applicants must submit:

1. graduate admission application and application fee
2. personal statement
3. three letters of recommendation
4. official transcripts
5. 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. The TOEFL is required for an applicant whose native language is not English. Further details are available on the admission services website.

The personal statement should explain the applicant's professional goals and reasons for desiring to enroll in the doctoral program, describe any research experiences and indicate personal research interests.

Depending on prior academic preparation and accomplishments, it is recommended that the student consider taking the following courses to ensure adequate background preparation:

CSE 230 Computer Organization and Assembly Language Programming
CSE 310 Data Structures and Algorithms
EEE 203 Signals and Systems I
EEE 335 Analog and Digital Circuits
MAT 243 Discrete Mathematical Structures

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

Career opportunities

Graduates from the doctoral program in computer engineering are able to analyze and synthesize key theories and methods used in the field of computer engineering. These graduates can generate and evaluate new theories, methods and designs that can advance the field of computer engineering. More specifically, computer engineering program graduates have the skills to advance the design, system integration, testing, evaluation and deployment of the state-of-the-art hardware and software for systems that include computing, communications and networking (wired and wireless), control functions, sensing, signal processing and actuation.

These skills can be applied in high-demand growth areas, such as autonomous systems and robotics; distributed, dependable and secure systems; and embedded systems for media processing and communications. Career examples include:

- computer engineering professor
- computer engineering researcher
- computer hardware engineer
- computer systems engineer
- systems software engineer

Contact information

Computer Science and Engineering Program | CTRPT 105
SCAI.Grad.Admission@asu.edu | 480-965-3199
Admission deadlines