Computer Science (Cybersecurity), PhD

ESCSEIAPHD

A degree in computer science is the next step in your journey to become a great leader, innovator, entrepreneur and educator.

Program description

Degree awarded: PHD Computer Science (Cybersecurity)

The PhD program in computer science with a concentration in cybersecurity is designed for graduate students who want to pursue a thorough education in the area of cybersecurity and information assurance.

The goal of this concentration is to provide students with the knowledge and skills in science and engineering for cybersecurity, including applied cryptography, computer and network security, computer forensics, data and information security and software security.

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.

Domestic students enrolled in the cybersecurity concentration are eligible for federal fellowships, such as the Department of Defense Information Assurance Scholarship Program and the Federal Cyber Service Scholarship for Service Program. For more information, students can visit the [Cybersecurity and Trusted Foundations](#) website

ASU is certified as a National Center of Academic Excellence in Information Assurance Education and a National Center of Academic Excellence in Information Assurance - Research by the National Security Agency and the Department of Homeland Security. Information assurance 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:** [Tempe](#)

Degree requirements

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

Required Core Areas (9 credit hours)
foundations (3)
systems (3)
applications (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)

Research (18 credit hours)
CSE 792 Research (18)

Electives and Additional Research (36 credit hours)

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

Additional Curriculum Information
Courses that are used to satisfy the core area requirement cannot be used to satisfy electives or other requirements. A grade of "B" or better is required for core courses.

18 credit hours of CSE 792 Research are required, and up to 54 credit hours are allowed on the plan of study. Students with research credit hours in excess of 18 add these credit hours to their electives and additional research.

Electives include:

- additional CSE 792 Research credit hours (up to 36 credit hours allowed beyond the required 18)
- computer science courses of which up to 18 credit hours of CSE 590 and CSE 790: Reading and Conference is allowed
- up to six credit hours of interdisciplinary electives in other academic units that are subject to program chair approval

When approved by the academic unit and the Graduate College, this program allows 30 credit hours from a previously awarded master's degree to be used for this degree.

A maximum of three credit hours of 400-level coursework may be applied on the plan of study.

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 in computer science, computer engineering or a closely related area. Most applicants should have earned a master's degree, but exceptional undergraduate applicants may be admitted directly into the doctoral program.

Applicants must have a minimum cumulative GPA of 3.50 (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 3.50 (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 from every university attended
3. three letters of recommendation
4. a statement of purpose
5. curriculum vitae or resume
6. 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.

GRE scores are optional.

If the student is assigned any deficiency coursework upon admission, those classes must be completed 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, everyoneâs 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 with a doctorate in computer science are able to analyze, understand and apply key theories and algorithms used in the field of computer science. They are also able to generate and evaluate new theories, algorithms and software modules that can advance the field of computer science. Graduates have a competitive advantage when it comes to securing employment.

Career examples include:

- computer science researcher
- computer science security professor
- data scientist engineer
- machine learning, AI or computer vision engineer
- machine learning, AI or computer vision scientist

Contact information

[Computer Science and Engineering Program](#) | CTRPT 105
[SCAI.Grad.Admission@asu.edu](#) | 480-965-3199