

Computer Gaming, Certificate

ESSCICERT

If you love gaming and want to learn more about the programming behind it, this is the certificate for you.

Description

The computer gaming certificate program is designed to provide a game development skill set that the student can apply to domain-specific applications in their major. The skill set includes architecture of game engines, art design and computer graphics for gaming, and game software development.

In this certificate program, students learn to apply gaming technology to the rapidly growing video game industry and to business, medicine, geography, biotechnology and education. Examples of projects include:

- building a game that teaches linear algebra by incorporating trigonometric rules into the game design
- creating a game that teaches correct sentence construction to beginning learners of English
- creating a game to help patients with physical therapy
- creating an interactive virtual world for corporate training
- designing a game platform incorporating geographic information systems
- inventing a surgical simulation to educate medical students

At a glance

- **College/School:** [Ira A. Fulton Schools of Engineering](#)
- **Location:** [Tempe](#)

Program requirements

[2024 - 2025 Certificate Map](#)
[Certificate Map \(Archives\)](#)

Students will complete nine credit hours of core courses (including a final capstone project) and nine credit hours of elective courses. The certificate requires 12 credit hours of upper-division coursework. All courses must be passed with a "C" or better. Students need to allow at least three years to complete the certificate program due to the prerequisite structure.

Core Courses -- 9 credit hours

[CPI 111: Game Development I \(QTRS OR CS\)](#) (3)

[CPI 211: Game Development II](#) (3)

[CPI 441: Gaming Capstone](#) (3)

Notes: CPI 441 is only offered in Spring semesters

Electives -- 9 credit hours

[CPI 311: Game Engine Development](#) (3)

Notes: CPI 311 is only offered in Fall semesters

[CPI 321: Fundamentals of Game Art](#) (3)

Notes: CPI 321 is only offered in Spring semesters

[CPI 394: Game Design Fundamentals](#) (3)

[CPI 411: Graphics for Games](#) (3)

Notes: CPI 411 is only offered in Spring semesters

[CPI 421: 3-D Modeling and Texturing](#) (3)

Notes: CPI 421 is only offered in Fall semesters

[CPI 462: Design for Learning in Virtual Worlds](#) (3)

Notes: CPI 462 is offered infrequently

[CPI 484: Internship](#) (3)

[FMS 365: Video Games and Narrative](#) (3)

[SER 431: Advanced Graphics](#) (3)

Notes: SER 431 is offered infrequently

Prerequisite courses may be needed in order to complete the requirements of this certificate.

Enrollment requirements

The computer gaming certificate is open to any student admitted to an undergraduate degree program at ASU who is in good academic standing. This certificate can also be used by interdisciplinary studies BA students as part of their degree program.

All students are eligible to take CPI courses alongside their major, but they must follow the course prerequisite structure. Students must also note that some courses are offered only in fall or in spring; as a result, the courses may take two years to complete.

A student pursuing an undergraduate certificate must be enrolled as a degree-seeking student at ASU. Undergraduate certificates are not awarded prior to the award of an undergraduate degree. A student already holding an undergraduate degree may pursue an undergraduate certificate as a nondegree-seeking graduate student.

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:

- Demonstrate the ability to apply game development techniques in solving real-world problems in different application domains.
- Demonstrate the ability to create a portfolio of hands-on games and prototypes using state-of-the-art technology.

Career opportunities

Students can advance their career options with an undergraduate certificate. Those who have added this computer gaming specialization as a complement to their major program of study may be more marketable to employers in the gaming industry.

Contact information

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