



Game and App Development

The Game and App Development program of study focuses on occupational and educational opportunities associated with researching, designing, developing, testing, and operating systems-level software for games and mobile computer applications. This program of study includes creating, modifying, and testing the codes, forms, and script that allow computer applications to run.



Courses for High School Credit

Level 1	• Computer Science I
Level 2	• AP Computer Science A • Entrepreneurship
Level 3	• Game Programming and Design
Level 4	• Mobile Application Development

Aligned Industry-Based Certifications

- Apple App Development with Swift
- Certified Professional Programmer

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	<ul style="list-style-type: none"> • Intern at a local IT company to develop skills in programming and coding • Shadow a software developer to learn how they create and improve software to support efficient processes at their company
Expanded Learning Opportunities	<ul style="list-style-type: none"> • Program and create a game



Successful completion of the Game and App Development program of study will fulfill requirements of the STEM endorsement if the math and science requirements are met or the Business and Industry endorsement.

Example Postsecondary Opportunities



Apprenticeships

- Computer Programmer Apprenticeship

Associate Degrees

- Computer Programming
- Web Page, Digital/Multimedia and Information Resources Design

Bachelor's Degrees

- Video Game Design
- Mobile Development

Master's, Doctoral, and Professional Degrees

- Software Engineering

Additional Stackable IBCs/License

- IBM iOS and Android Mobile App Developer

Example Aligned Occupations

(Based on statewide employment data)



Computer Programmers

Median Wage: \$87,997
Annual Openings: 1,176
10-Year Growth: 4%

Special Effect Artists and Animators

Median Wage: \$86,357
Annual Openings: N/A
10-Year Growth: 17%

Web and Digital Interface Designers

Median Wage: \$105,760
Annual Openings: N/A
10-Year Growth: 26%



For more information visit:
<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>



Game and App Development Course Descriptions:

Computer Science I - COS1020Q (1 Credit)

Level: 1 Course Fee: \$20
Prerequisites: None GPA Weight: Advanced

Computer Science I will foster students' creativity and innovation by presenting opportunities to design, implement, and present meaningful programs through a variety of media. Students will collaborate with one another, their instructor, and various electronic communities to solve the problems presented throughout the course. Through data analysis, students will identify task requirements, plan search strategies, and use computer science concepts to access, analyze, and evaluate information needed to solve problems. By using computer science knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will learn digital citizenship by researching current laws and regulations and by practicing integrity and respect. Students will gain an understanding of the principles of computer science through the study of technology operations, systems, and concepts. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem solving, and decision making; digital citizenship; and technology operations and concepts.

AP Computer Science A - COS1330P (2 credits)

Level: 2 Course Fee: None
Prerequisites: None GPA Weight: Advanced

AP Computer Science A introduces students to computer science through programming. Fundamental topics in this course include the design of solutions to problems, the use of data structures to organize large sets of data, the development and implementation of algorithms to process data and discover new information, the analysis of potential solutions, and the ethical and social implications of computing systems. The course emphasizes object-oriented programming and design using the Java programming language.

Note: This course satisfies a math and LOTE credit requirement for students on the Foundation High School Program.

Entrepreneurship- BUS1220 (1 credit)

Level: 2 Course Fee: None
Prerequisites: None GPA Weight: Regular

Students will learn the principles necessary to begin and operate a business. The primary focus of the course is to help students understand the process of analyzing a business opportunity, preparing a business plan, determining feasibility of an idea using research, and developing a plan to organize and promote the business and its products and services.



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Game Programming & Design- COS1700H (1 credit)

Level: 3 Course Fee: None
Prerequisites: Algebra I GPA Weight: Advanced

Game Programming and Design will foster student creativity and innovation by presenting students with opportunities to design, implement, and present meaningful programs through a variety of media. Students will collaborate with one another, their instructor, and various electronic communities to solve gaming problems. Through data analysis, students will include the identification of task requirements, plan search strategies, and use programming concepts to access, analyze, and evaluate information needed to design games. By acquiring programming knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will learn digital citizenship by researching current laws and regulations and by practicing integrity and respect. Students will create a computer game that is presented to an evaluation panel. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem solving, and decision making; digital citizenship; and technology operations and concepts.

Mobile App Development - COS4100H (1 credit)

Level: 4 Course Fee: None
Prerequisites: Algebra I GPA Weight: Advanced

Mobile Application Development will foster students' creativity and innovation by presenting opportunities to design, implement, and deliver meaningful projects using mobile computing devices. Students will collaborate with one another, their instructor, and various electronic communities to solve problems presented throughout the course. Through data analysis, students will identify task requirements, plan search strategies, and use software development concepts to access, analyze, and evaluate information needed to program mobile devices. By using software design knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will learn digital citizenship by researching current laws and regulations and by practicing integrity and respect. Students will gain an understanding of the principles of mobile application development through the study of development platforms, programming languages, and software design standards. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem solving, and decision making; digital citizenship; and technology operations and concepts.



For more information visit:
<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>