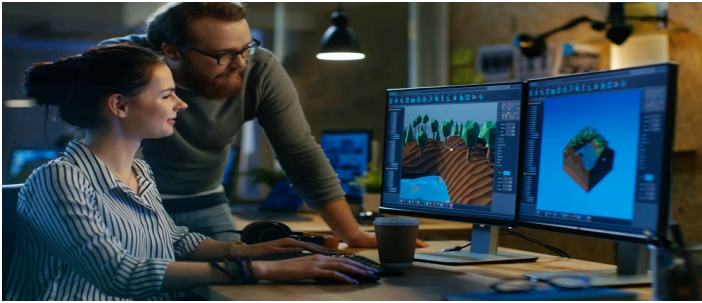# CIT, SIMULATION AND GAME DESIGN, LEVEL 2 CERTIFICATE

Program Information

Are you a dreamer of worlds? Have you always been as interested in playing the game as you are interested in knowing how it was created? If so, a rewarding career in gaming may be in your future. At San Jacinto College, we teach the latest in game design and programming, simulation, level design, engine development, tool building, and multimedia programming. You'll get your hands on the latest design applications and game engines, including multi-player and multimedia audio and video tools. Are you up to the challenge?

San Jacinto College's Simulation and Gaming Technology program:

- Is designed for students who are interested in advanced programming areas, such as simulations, game design, game programming, level design, engine development tool building, and multimedia programming;
- Includes in-depth hands-on training with industry standard applications and game engines, as well as multi-player and multimedia (including audio and video) programming, and two-semester project classes where students design and implement their own games or simulations; and
- Offers a simulation and game programming certificate program so students can enhance their training beyond the basic application programming certificate or Associate of Applied Science (AAS) degree.

Additional Information

Students must apply for admission to this program by contacting the Department Chair and verifying that they have the appropriate interest and drive to succeed in completing this program's certificate requirements.

Career Opportunities

The Computer Simulation and Gaming Program prepares students for careers as:

- Entry level programmers,
- Game programmers,
- Level designers,
- Assistant game designers,
- Game engine programmers, and
- Software testers.

Earning Potential

Web developer: $98,119[1] per year

[1] Source: texaswages.com (http://texaswages.com), median salary Gulf Coast region, 2023

For more information, students may contact North campus, 281-998-6350, x7242; or South campus, 281-998-6350, x3502.

Campuses

North Campus
South Campus

Information

The Computer Information Technology (CIT) program is designed primarily for students seeking an Occupational Certificate, Certificate of Technology, or Associate of Applied Science (AAS) degree. Students can expect to complete most CIT certificates in three semesters and the AAS degrees in as few as four semesters. For those students who have already fulfilled general education requirements, it may be possible to finish degree course work even sooner. It is generally recommended that students complete the Computer Information Technology (CIT) Foundations Occupational Certificate before continuing into a Certificate of Technology or AAS degree. Most courses in this Occupational Certificate will apply toward the other CIT certificates and AAS degrees.

The CIT curriculum provides the graduate with the knowledge and in-demand applied technical skills needed to enter computer-related occupations in the business/industry job market. Certificates and AAS degrees are available in the following areas: Applications Programming, Desktop Support and Network Administration, Information Technology Cybersecurity, Simulation and Game Design, Network Administration Cisco, Cloud Computing, and Web Applications Development.

- The Applications Programming Specialty is for students interested in developing computer programs (designing, coding, testing, and debugging), both stand-alone and web-based, in languages such as C++ and Java as well as gaining skills in the use of Python and SQL. Electives may include courses in C#, Game Design, JavaScript, and mobile app programming. Emphasis is placed on applying the techniques and procedures learned in providing software solutions for both business-related and practical computer problems that are robust, error-free, and easy to use.
- In Desktop Support and Microsoft Network Administration, a student can choose between a track with emphasis on computer hardware (installing, maintaining, repairing, and upgrading) and software support (installing and configuring) or one with focus on installing, configuring, and maintaining computer networks. This program of study prepares students for CompTIA's A+ and Network+ exams as well as other widely recognized industry certifications. Support and network graduates are invaluable in keeping businesses running smoothly.
- The Cloud Computing program provides individuals education, training, the knowledge, skills, and concepts necessary to serve as a cloud support technician. Upon completion of the program, students will develop the fundamental skills necessary to support and manage

infrastructure and workloads on cloud platforms such as Amazon Web Services (AWS) and Microsoft Azure.

- The Cybersecurity (AAS) program provides students with comprehensive foundational knowledge essential for pursuing entry-level security certifications like Security+. This program not only prepares students for immediate certification but also lays a robust groundwork for advanced certifications and further academic pursuits, such as transitioning into a Cybersecurity Bachelor's program. Graduates will be equipped with the skills necessary to effectively safeguard computers and networks against a wide range of threats, including hackers, viruses, and cyberattacks. As a Cybersecurity professional, you will play a critical role in maintaining the integrity and security of digital infrastructures.
- The Simulation and Game Design program is designed for students who are interested in advanced programming areas, as in simulations, game programming, program testing, or multimedia programming.
- In the Network Administration Cisco Specialty, emphasis is on the design, implementation, and administration of local and wide-area router networks.
- The Web Applications Development program prepares students for entry-level positions in website design, web-based applications development, and website administration.
- The IT Specialist program equips individuals for a dynamic career in a rapidly growing field. As technology becomes integral to nearly every industry, the demand for skilled IT support specialists is on the rise. Employment in this sector is projected to grow by 6% from 2022 to 2032, fueled by advancements in cloud computing, cybersecurity, and the ongoing need for technology upgrades. The program offers opportunities to specialize in Cloud Computing, Systems Administration, or CISCO Networking, providing a well-rounded pathway to a rewarding IT support career. Through technical training and essential skill development, graduates are prepared to meet the evolving needs of modern organizations.

Note for transfer students: Due to variations in requirements at four-year colleges and universities, students desiring a bachelor's degree in Computer Science are strongly advised to consult a CIT Department Chair at San Jacinto College and at the institution to which they wish to transfer. This communication regarding transfer degree plans with both computer department heads will help to ensure the transition process is as smooth as possible.

Students enrolling into San Jacinto College programs with external learning experiences (i.e., clinical, practicum, externship, cooperative, etc.) will be required to comply with the immunization requirements and policies of the clinical/external learning sites to engage in all clinical/external learning experiences. Vaccination requirements at clinical/external learning sites are implemented pursuant to the independent authority of such facilities and are not mandated by San Jacinto College. Failure to meet the immunization requirements mandated by clinical/external learning sites may limit a student's ability to complete the program and/or may delay the student's graduation date. San Jacinto College does not process exemptions, and students should address potential vaccination exemptions directly with the clinical/external learning site.

Simulation and Game Programming Certificate Program

Students must apply for admission to this program by contacting the Department Chair and verifying that they have the appropriate interest and drive to succeed in this program's awards.

The CIT Simulation and Game Programming Certificate program is designed for students who are interested in advanced programming areas, such as simulations, game programming, program testing, and/or multimedia programming.

Plan of Study

5IT-SGD

First Term		Credits
GAME 1303	Introduction to Game Design and Development	3
ITSC 1319	Internet/Web Page Development	3
ITSE 1329	Programming Logic and Design	3
ITSE 1302 or ARTV 1345	Computer Programming or 3-D Modeling and Rendering	3
	Credits	12
Second Term		
GAME 2332	Project Development I	3
IMED 1341	Interface Design with Photoshop	3
GAME 1304	Level Design	3
ITSE 1311	Beginning Web Programming	3
ITSE 2359 or ARTV 1341	Advanced Computer Programming or 3-D Animation I	3
	Credits	15
Third Term		
ITSE 2313 or ITSE 2321	Web Authoring or Object-Oriented Programming	3
ITSE 1333	Mobile Applications Development	3
GAME 2341	Game Scripting	3
	Credits	9
Fourth Term		
GAME 2359	Game & Simulation Group Project	3
INEW 2340	Object-Oriented Design - Game Design	3
GAME 1343 or ARTV 2351	Game and Simulation Programming I or 3-D Animation II	3
	Credits	9
	Total Credits	**45**

Capstone Experience: GAME 2359 Game & Simulation Group Project