

**CompuScholar, Inc.**  
Alignment to Alabama Standards  
**Computer Game and Simulation Programming**

**Alabama Course Details:**

<b>Course Title:</b>	Computer Game and Simulation Programming
<b>Career Cluster(s):</b>	Business Management and Administration
<b>Course Credit:</b>	1
<b>Grade Levels:</b>	9 - 12

**CompuScholar Course Details:**

<b>Course Title:</b>	CompuScholar: Unity Game Programming
<b>Course ISBN:</b>	978-0-9887070-7-8
<b>Course Year:</b>	2021

**Note 1:** Citation(s) listed may represent a subset of the instances where objectives are met throughout the course.

**Note 2:** Citation(s) for a "Lesson" refer to the "Lesson Text" elements and associated "Activities" within the course, unless otherwise noted. The "Instructional Video" components are supplements designed to introduce or re-enforce the main lesson concepts, and the Lesson Text contains full details.

**Note 3:** Citation(s) to "Supplemental" or "Suppl." chapters refer to Supplemental Chapters found at the end of the main sequence of numbered chapters within the course.

**Alabama Course Description**

Computer Game and Simulation Programming standards are designed to equip students with the skills needed to prepare for higher education and for success in careers such as a computer game simulator, designer, programmer, or software developer.

**Alabama Course Standards**

<b>Foundational Standards</b>	<b>CITATION(S)</b>
1. Incorporate safety procedures in handling, operating, and maintaining tools and machinery; handling materials; utilizing personal protective equipment; maintaining a safe work area; and handling hazardous materials and forces.	N/A (See Digital Savvy, Chapter 24, Lesson 3)
2. Demonstrate effective workplace and employability skills, including communication, awareness of diversity, positive work ethic, problem-solving, time management, and teamwork.	Chapters 14, 26 (Team projects within SDLC) Chapter 25, Lessons 1,3
3. Explore the range of careers available in the field and investigate their educational requirements, and demonstrate job-seeking skills including resume-writing and interviewing.	Suppl. Chapter 3, Lesson 5
4. Advocate and practice safe, legal, responsible, and ethical use of information and technology tools specific to the industry pathway.	Suppl. Chapter 1, Lessons 1,2,3

5. Participate in a Career and Technical Student Organization (CTSO) to increase knowledge and skills and to enhance leadership and teamwork.	Suppl. Chapter 3, Lesson 7
6. Discuss and demonstrate ways to value diversity.	Chapter 25, Lesson 3

<b>Pre-Production</b>	<b>CITATION(S)</b>
1. Research and share information on the history of video games, including timelines of events, historical figures, and changes in generational game development.	Supplemental Chapter 2, Lesson 2
2. Play a variety of games to research, collect, and analyze game play data.	Chapter 13, Lesson 2 Chapter 22, Lesson 3
a. Write a critical analysis of a current video game.	Chapter 13, Lesson 2 Chapter 22, Lesson 3
3. Research the methods used to create and sustain player immersion and explain why it is important.	Chapter 13, Lesson 3 Chapter 15, Lesson 3 Chapter 21, Lesson 1

<b>Game Platforms</b>	<b>CITATION(S)</b>
4. Explain game ratings, genres, and types.	Suppl. Chapter 2, Lesson 1 Suppl. Chapter 3, Lesson 3
5. Research and share information on various computer and mobile game development platforms.	Chapter 24, Lessons 2,3,4

<b>Game Design and Development Process</b>	<b>CITATION(S)</b>
6. Summarize the game design production cycle.	Chapter 13, Lessons 1, 4 Chapter 25, Lesson 1
7. Define the roles and responsibilities of team members on a video game design team and identify their typical short- and long-term goals.	Chapter 25, Lesson 3
8. Demonstrate game concept development process and roles both independently and as part of a team.	Chapters 13, 14, 25, 26
9. Compare and contrast communication features and interface design.	Chapter 22
10. Assess and apply strategies to prevent, debug, and eliminate problems. Examples: viruses, malware, inconsistencies within data	Chapter 11 Suppl. Chapter 1, Lesson 3
11. Develop an end goal game strategy and feedback needed to progress through the game. Examples: earning points, reaching levels, overcoming obstacles	Chapter 13, Lessons 2, 3
12. Incorporate a user friendly experience for design functionality which allows players to change movements, immerse themselves in the environment, and take control or drive on their own.	Chapter 13, Lessons 2, 3 Chapters 15, 16
13. Include interface elements in game design. Examples: sounds, graphics, spatial recognition, narration	Chapters 17, 18, 22, 23

14. Create an original game design which executes game concept development, communication features, interface design, game strategy, and immersification.	Chapters 13, 14, 26
a. Create a title page for an original project with instructions, characters, levels, puzzles, art, graphics, animation, and clear navigation including start, pause, quit level, and end game.	Chapter 22 Chapter 24, Lesson 1

<b>Software Application</b>	<b>CITATION(S)</b>
15. Identify tools and software commonly used in game development, including web page and graphic design, art, and animation.	Chapters 1, 3, 17, 23
16. Utilize vector, modeling, and paint programs used to make graphics and animation.	Chapter 23, Lesson 3
a. Explain the principles of 2D and 3D animation as they relate to game graphics. Examples: walk, run, jump, idle	Chapter 17, Lessons 1,2,3
17. Explain the use of readme files and source codes, and demonstrate appropriate documentation for templates, libraries, and copyrighted materials used.	Chapter 3, Lesson 3 Suppl. Chapter 1, Lesson 2

<b>Post-Production (Game Testing, Enhancement, Release)</b>	<b>CITATION(S)</b>
18. Enhance or upgrade an original stand-alone or online game using various computer programming languages or game/animation engines to write code and implement programming skills.	Students create new games or enhance starter projects in every chapter activity.
a. Integrate created assets into a functional digital platform with a logical theme or concept. Examples: scoreboard, leaderboard, celebratory messages, levels, lives, instructional display	Students integrate assets into functional games in every chapter activity.
19. Execute an original game and implement game testing. Examples: in-house, larger testing group(s), open release without additional instructions	Chapter 14, Activity 3 Chapter 26, Activity 3
a. Demonstrate an understanding of the techniques used to evaluate game mechanics, game play, flow, and game design.	Chapter 13
b. Analyze design elements that maintain player interest and vary the degree of challenge.	Chapter 13, Lessons 2,3
20. Demonstrate project management skills, utilize feedback data to improve an original game, and add advanced features. Examples: feedback from testing groups, basic general maintenance for overall improvement	Chapters 14, 25, 26

<b>Career Awareness</b>	<b>CITATION(S)</b>
21. Gather information on the gaming industry, including career opportunities and training in game design and production.	Suppl. Chapter 3, Lesson 5
a. Connect information to personal interests and develop a plan for a possible future career in the field of computer gaming and simulation programming.	Suppl. Chapter 3, Activity 5

22. Develop a plan to identify and enhance any workplace skills needing improvement in the computer game field.	Suppl. Chapter 3, Activity 5
a. Create a computer game or simulation designed to improve workplace skills.	Chapters 14, 26