

CompuScholar, Inc.

Alignment to Florida "Game & Simulation Programming" Course Standards

Florida Course Details:

Course Name:	Game & Simulation Programming (2020-2021)
Course Code(s):	8208330
Credit:	1
State Standards Link:	http://www.fldoe.org/core/fileparse.php/19869/urlt/8208300-2021.rtf

CompuScholar Course Details:

Course Title:	Unity Game Programming
Course ISBN:	978-0-9887070-7-8
Course Year:	2019

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.

Course Description

This course is focused on students acquiring the appropriate programming skills for rendering a game or simulation product, including program control, conditional branching, memory management, score-keeping, timed event strategies and methodologies, and implementation issues.

Course Standards

40.0 - Identify functions of information processing. – The student will be able to:	CITATION(S)
40.01 Identify characteristics of high-level languages.	Chapter 3, Lesson 1
40.02 Identify characteristics of operating systems.	N/A (See Digital Savvy)
40.03 Identify characteristics of a network.	N/A (See Digital Savvy)
40.04 Identify needs for software development in the game/simulation industry.	Chapter 1 Chapter 3
40.05 Identify causes of software development problems in the game/simulation industry.	N/A
40.06 Identify most appropriate languages for solving game/simulation industry problems.	Chapter 1 Chapter 3
40.07 Manipulate data between numbering systems.	Supplemental Chapter 3, Lesson 2

40.08 Identify how numeric and non-numeric data are represented in memory.	Chapter 6, Lesson 1 Supplemental Chapter 3, Lesson
40.09 Distinguish among integer, fixed-point, and floating-point calculations.	Chapter 6, Lesson 2

41.0 - Test programs. – The student will be able to:	CITATION(S)
41.01 Develop a plan for testing programs.	Chapters 11, 14, 26
41.02 Develop test harnesses for use in program testing.	Chapters 11, 14, 26
41.03 Perform debugging activities.	Chapters 11, 14, 26
41.04 Distinguish among the different types of program and design errors.	Chapter 11, Lesson 1
41.05 Evaluate program test results.	Chapters 11, 14, 26
41.06 Execute programs and subroutines as they relate to the total application.	Chapter 3, Lesson 4 Chapter 9, Lesson 3
41.07 Use trace routines of compilers to assist in program debugging.	Chapter 11, Lessons 2 - 3
41.08 Compile and run programs.	Students build and run programs in many chapters.
41.09 Create a stable code base.	Students create and maintain code throughout the course, with re-use of shared objects

42.0 - Plan program design. – The student will be able to:	CITATION(S)
42.01 Formulate a plan to determine program specifications individually or in groups.	Chapters 13, 14, 26
42.02 Use a graphical representation or pseudo code to represent the structure in a program or subroutine.	Chapter 21, Lesson 2
42.03 Design programs to solve problems using problem-solving strategies.	Chapter 21, Lesson 2
42.04 Prepare proper input/output layout specifications.	Chapter 4, Lesson 3 Chapter 22
42.05 Examine existing utility programs and subroutines for use with other programs.	Chapter 9 Activity Chapter 15, Lesson 2 Use of Unity API throughout
42.06 Manually trace the execution of programs and verify that programs follow the logic of their design as documented.	Chapter 11, Lesson 2

43.0 - Code programs. – The student will be able to:	CITATION(S)
43.01 Utilize reference manuals.	Chapter 2, Lesson 1
43.02 Write programs according to recognized programming standards.	Chapter 3, Lesson 3 and throughout the course
43.03 Write internal documentation statements as needed in the program source code.	Chapter 3, Lesson 3 and throughout the course
43.04 Code programs in high-level languages for game/simulation applications.	Students write code from Chapter 3 onwards
43.05 Write code that accesses sequential, random, and direct files.	N/A
43.06 Code programs using logical statements (e.g., If-Then-Else, Do...While).	Chapter 7
43.07 Enter and modify source code using a program language editor.	Chapter 3, Lesson 2 and throughout the course
43.08 Code routines within programs that validate input data.	Chapter 9, Lesson 5
43.09 Use the rounding function in calculations within programs.	N/A
43.10 Write programs as part of a development team.	Chapters 14 and 26
43.11 Write event-driven programs.	Chapter 3, Lesson 4 and throughout the course
43.12 Write programs using timed-event strategies and methodologies.	Chapter 10, Lesson 4
43.13 Write programs that include score keeping.	Chapter 6, Lesson 2 and multiple other projects

44.0 - Perform program maintenance. – The student will be able to:	CITATION(S)
44.01 Review requested modification of programs and establish a plan of action.	Chapters 14 and 26
44.02 Design needed modifications in conformance with established standards.	Chapters 14 and 26
44.03 Code, test, and debug modifications prior to updating production code.	Chapters 14 and 26
44.04 Update production programs and documentation with changes.	Chapters 14 and 26
44.05 Analyze output to identify and annotate errors or enhancements.	Chapters 14 and 26

45.0 - Create and maintain documentation. – The student will be able to:	CITATION(S)
45.01 Write documentation to assist operators and end-users.	Chapter 13 Chapter 25, Lesson 2
45.02 Follow established documentation standards.	Chapter 13 Chapter 25, Lesson 2
45.03 Update existing documentation to reflect program changes.	Chapter 13 Chapter 25, Lesson 2

46.0 - Evaluate assigned game programming tasks. – The student will be able to:	CITATION(S)
46.01 Estimate the time necessary to write a program.	Chapter 25, Lesson 1

47.0 - Implement enhanced program structures. – The student will be able to:	CITATION(S)
47.01 Write programs that include tables or arrays and routines for data entry and lookup.	Chapter 12
47.02 Write programs to import/export data from external sources.	N/A
47.03 Write programs that use iteration.	Chapter 12, Lessons 2 - 3
47.04 Write routines that incorporate “help” text.	N/A
47.05 Write programs that read and write random files.	N/A
47.06 Write interactive programs.	All course projects are interactive
47.07 Design screen layouts for use in interactive programs.	Chapter 22
47.08 Write programs using object-oriented languages.	Chapter 9 and throughout the course
47.09 Write programs that include data structures (e.g., stacks, queues, trees, linked lists).	Chapter 12 (Arrays only)
47.10 Write programs that are event-driven to support player goals and actions.	Chapter 3, Lesson 4 Chapter 9, Lesson 3

48.0 - Demonstrate the importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. – The student will	CITATION(S)
48.01 Describe personal and jobsite safety rules and regulations that maintain safe and healthy work environments.	Supplemental Chapter 1, Lesson 3
48.02 Explain emergency procedures to follow in response to workplace accidents.	N/A

48.03 Create a disaster and/or emergency response plan.	Supplemental Chapter 1, Lesson 3
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49.0 - Demonstrate leadership and teamwork skills needed to accomplish team goals and objectives. – The student will be able to:	CITATION(S)
49.01 Employ leadership skills to accomplish organizational goals and objectives.	Chapters 14 and 26
49.02 Establish and maintain effective working relationships with others in order to accomplish objectives and tasks.	Chapters 14 and 26
49.03 Examine licensing, certification, and industry credentialing requirements.	Supplemental Chapter 3, Lesson 5
49.04 Maintain a career portfolio to document knowledge, skills, and experience.	Supplemental Chapter 3, Lesson 5
49.05 Evaluate and compare employment opportunities that match career goals.	Supplemental Chapter 3, Lesson 5
49.06 Identify and exhibit traits for retaining employment.	Supplemental Chapter 3, Lesson 5
49.07 Identify opportunities and research requirements for career advancement.	Supplemental Chapter 3, Lesson 5
49.08 Research the benefits of ongoing professional development.	Supplemental Chapter 3, Lessons 5 and 7
49.09 Examine and describe entrepreneurship opportunities as a career planning option.	Supplemental Chapter 3, Lessons 5 and 7

50.0 - Demonstrate personal money-management concepts, procedures, and strategies. – The student will be able to:	CITATION(S)
50.01 Identify and describe the services and legal responsibilities of financial institutions.	N/A
50.02 Describe the effect of money management on personal and career goals.	N/A
50.03 Develop a personal budget and financial goals.	N/A
50.04 Complete financial instruments for making deposits and withdrawals.	N/A
50.05 Maintain financial records.	N/A
50.06 Read and reconcile financial statements.	N/A
50.07 Research, compare and contrast investment opportunities	N/A