

CompuScholar, Inc.

Alignment to Utah's **Game Development Fundamentals** Standards

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| Course Title: TeenCoder: Game Programming |
| Course ISBN: 978-0-9887070-1-6 |
| Course Year: 2015 |

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

Game Development Fundamentals, 2013 revision

Levels: 9-12

Units of Credit: 0.5

CIP Code: 11.0803

Core Code: 35-02-0000-045, 35-02-0013-045

Prerequisite: recommended Computer Programming 1, Digital Media1

Skill Test: TBD July 2015

MTA: Gaming Development Fundamentals 98-374

Course Description

This course is designed to provide students with knowledge and project based experience of fundamental gaming development concepts relating to STEM. These concepts include game design, scripting, creation of digital assets, graphic resources, animations, understanding hardware, problem solving, critical thinking, collaboration, and project management.

| Standard 1: Video Game History | CITATION(S) |
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| Students will understand the relevant history of video games. | |
| Objective 1: Relevant History -- The student will be able to discuss the relevant history of gaming including; arcade, console, computer, mobile, and modern devices. | |
| a. Identify Key figures and designers in the history of gaming | Supplemental Lesson 4 |
| b. Identify early games | Chapter 1, Lesson 2 Supplemental Lesson 4 |
| c. List important milestones in gaming | Supplemental Lesson 4 |
| Objective 2: Game Ratings -- Students will be familiar with the ESRB ratings categories. | |
| a. Understand child and youth ESRB ratings: eC - early childhood, E - Everyone, E 10+ - Everyone 10 and up, T - Teen | Supplemental Lesson 3 |

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| b. Understand what makes the adult ratings: M - Mature, AO - Adults only, RP - Rating pending | Supplemental Lesson 3 |
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| Standard 2: Communication Features and Game Interface Design | CITATION(S) |
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| Students will be able to apply communication features and game interface design. | |
| Objective 1: Game Design and Functionally -- Students will understand the design concept and importance of game functionality. | |
| a. Understand game feedback to user | Chapter 8, Lesson 1 |
| b. Understand game control for user | Chapter 5 |
| Objective 2: Design Feedback -- Students will understand the design feedback concepts. | |
| a. List game strategies (PUBLISHER'S NOTE: Interpreting as game "design" strategies, in context with the objective, as opposed to game "play" strategies.) | Chapter 2, Lesson 2 |
| b. Understand duration (PUBLISHER'S NOTE: Interpreting as length of game play, in context of end-of-game detection and restart.) | Chapter 8, Lesson 1 |
| c. Describe game success | Chapter 8, Lesson 1 |
| Objective 3: Design Control -- Students will understand the design control concepts | |
| a. Understand design functionality | Chapter 2, Lesson 1 |
| b. List usability in design control (PUBLISHER'S NOTE: Interpreting as "using lists to help control and navigate through game options.") | Chapter 13, Lesson 1 |
| c. Describe accessibility | Chapter 5, Lesson 1 |
| d. Understand immersion | Chapter 2, Lesson 1 |
| e. Describe design aesthetics | Chapter 2, Lesson 1 |
| Objective 4: Player View -- Students will understand the importance of "Player View" in game design | |
| a. Understand the following view options: | |
| • Two dimensional | Chapter 2, Lesson 2 |
| • Isometric | Chapter 2, Lesson 2 |
| • First Person | Chapter 2, Lesson 2 |
| • Third Person | Chapter 2, Lesson 2 |
| Objective 5: Interface Elements -- Students will understand the classifications of interface elements | |
| a. Understand diegetic & non-diegetic elements | n/a |
| b. Understand spatial elements | n/a |
| c. List meta | n/a |

| Standard 3: Game Platforms | CITATION(S) |
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| Students will be able to identify various gaming platforms and develop at least one game on one of those platforms. | |
| Objective 1: Consoles and Generations -- Students will be able to identify console and console generations. | |
| a. Describe Atari and its generations | Supplemental Lesson 4 |
| b. Describe Nintendo and its generations | Supplemental Lesson 4 |
| c. Describe Sega and its generations | Supplemental Lesson 4 |
| d. Describe Playstation and its generations | Supplemental Lesson 4 |
| e. Describe Microsoft and its generation | Supplemental Lesson 4 |
| Objective 2: Computer Platforms -- Students will be able to identify computer platforms and features. | |
| a. Identify Windows features | Supplemental Lesson 4 |
| b. Identify Macintosh features | Supplemental Lesson 4 |
| c. Identify Linux features | Supplemental Lesson 4 |
| Objective 3: Mobile Platforms -- Students will be able to identify and describe mobile platforms and features. | |
| a. Identify phones and describe features (Android, iOS, Windows) | Supplemental Lesson 4 |
| b. Identify tablets and describe features (Android, iOS, Windows) | Supplemental Lesson 4 |
| c. Identify Nintendo and describe features (Gameboy, DS, 3DS) | Supplemental Lesson 4 |
| d. Identify Playstation and describe features (PSP, Vita) | Supplemental Lesson 4 |

| Standard 4: Game Genres and Types | CITATION(S) |
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| Students will review and identify various game genres and types and develop at least one game using a game genre. | |
| Objective 1: Game Genres -- Students will be able to identify game genres Action, Adventure, Role playing (RPG), Simulation, Strategy, Multiplayer. | Chapter 1, Lesson 2 |

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| Objective 2: Game Genre Development -- Students will be able to use a selected game genre to develop a game. | Chapters 5-10 (Swarm arcade game); Chapter 16 (Bumper Cars arcade game) |
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| Standard 5: Game Design Production Cycle | CITATION(S) |
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| Students will be able to create a Game using the Game Design Production Cycle | |
| Objective 1: Implement Project Management -- Students will be able to implement project management (such as Agile, Scrum, etc.). | |
| a. Create an analog or digital prototype version of a game | Chapter 2, Lesson 1 (paper prototype) |
| b. Create a game using the design production process | n/a |
| c. Work in a team | n/a |
| d. Utilize project management skills | n/a |
| Objective 2: Game Concept Development -- Students will be able to develop and game concept. | |
| a. Create a game proposal - "Pitch Document" | Chapter 2, Lesson 1 |
| b. Develop a concept with considerations for plan, cost, and time | Supplemental Lesson 1 |
| Objective 3: Pre Production (Design) -- Students will be design documents as part of the Pre-Production (Design) of the game. | |
| a. Write a script - writing the storyline script | Chapter 2, Lesson 1 Chapter 2, Activity 1 |
| b. Create storyboards | Chapter 2, Lesson 1 Chapter 2, Activity 1 |
| c. Design the game | Chapter 2, Lesson 1 Chapter 2, Activity 1 |
| d. Select a game engine | Chapter 2, Lesson 2 |
| e. Plan game play mechanics | Chapter 2, Lesson 1 Chapter 2, Activity 1 |
| f. Put together a comprehensive design document detailing the game's goals | Chapter 2, Lesson 1 Chapter 2, Activity 1 |
| g. Plan level designs, rooms | Chapter 2, Lesson 1 Chapter 2, Activity 1 |
| h. Sketch and plan characters | Chapter 2, Lesson 1 Chapter 2, Activity 1 |
| i. Build an overall blueprint | Chapter 2, Lesson 1 Chapter 2, Activity 1 |
| Objective 4: Production (Create) -- Students will be able to create the assets and incorporate them in a game. | |
| a. Create a prototype of game | Chapter 2, Activity 1 |

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| b. Create art and text | Chapter 2, Lesson 1 Chapter 2, Activity 1 |
| c. Develop sounds for the game | Chapter 10 Activity |
| d. Implement scripting as needed | n/a |
| e. Create game animations | Chapter 9 |

| Standard 6 Post Production - Game Testing and Release | CITATION(S) |
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| Students will implement game testing and release the game after it has been developed. | |
| Objective 1: Alpha Testing - Students will alpha test games | |
| a. Find and repair bugs and glitches, | Chapter 13, Lesson 5 |
| b. Make needed adjustments | Chapter 13, Lesson 5 |
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| Objective 2: Beta Testing --Students will beta test games | |
| a. Implement beta testing | Chapter 13, Lesson 5 |
| b. Receive feedback from beta testers | Chapter 13, Lesson 5 |
| c. Make needed adjustments | Chapter 13, Lesson 5 |
| Objective 3: Game Release -- Students will publish/release games. | Chapter 13, Lesson 4 |
| Objective 4: Game Maintenance – Students will provide for maintenance of the game | n/a |

| Standard 7: Understanding Careers | CITATION(S) |
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| Students will explore careers and training in the game design and production world. | |
| Objective 1: Career Awareness – Students will develop career awareness related to working in the gaming industry. | |
| a. Identify personal interests and abilities related to Gaming, such as: 1) Identify personal creative talents 2) Identify organizational and leadership skills 3) Identify special interest areas | Supplemental Lesson 1 |
| b. Identify the members of the Gaming industry's job titles, such as: Programmer, Level Artist, Character Artist, Texture Artist, Animator, Programmer, Texture Artist, Animator, GUI Designer, and Sound Designer. | Supplemental Lesson 1 |
| c. Investigate career opportunities, trends, and requirements related to Gaming Industry careers. | Supplemental Activity 1 |
| Objective 2: Educational Pursuits – Students will develop a realistic Student Education Occupation Plan (SEOP) to help guide further educational pursuits | |
| a. Identify factors for employability and advancement in the gaming industry. | Supplemental Lesson 1 |

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| b. Survey existing Game Development businesses to determine what training is required | Supplemental Activity 1 |
| c. Survey universities and colleges to determine programs, degrees and training availability | n/a |
| d. Develop employability competencies/characteristics: responsibility, dependability, ethics, respect, and cooperation | n/a |
| e. Achieve high standards of personal performance with a positive work ethic and attitude | n/a |