

Curriculum at a Glance

Video Game Design 1

Grade 10-12

SUMMARY: This class is a continuation of Introduction to Video Game Design. Video Game Design 1 students will perform critical analysis of video games in order to gain a better understanding of play mechanics. Students will continue to work with 2D gaming software while learning game design techniques. These skills will enable the student to assemble interactive and engaging experiences for the users of their systems and applications.

Unit Description	Content and/or Skills
Unit 1: Understanding and Mapping Game Coordinates	<ul style="list-style-type: none">• Students will use absolute and relative coordinates to plot points on a game frame.• Students will identify X and Y axis positions and directions on a game frame.• Students will explain path movements and nodes.• Students will properly place objects in specified locations on a game frame.• Students will use algebraic thinking skills to solve for relative locations.
Unit 2: Launching	<ul style="list-style-type: none">• Students will describe how object movement is achieved in a game• Students will be able to create animated sprites and moving targets.• Students will create custom sprites.• Students will be able to program an object to launch and destroy an enemy object.
Unit 3: Game Physics	<ul style="list-style-type: none">• Students will adapt a game to meet customer expectations.• Students will create game interactions dealing with sprite replacement and random motion.• Students will program an object to launch in a specified direction.
Unit 4: Beta Build	<ul style="list-style-type: none">• Students will explain the iterative process of building a game.• Students will modify the user interface for a game.• Students will modify game content based on customer comments.• Students will debug and fix game errors based on testing and customer feedback.
Unit 5: Maze Games	<ul style="list-style-type: none">• Students will explain the purpose for room grids.• Students will align game assets to grid lines using the snap function.• Students will program gravity into a game.• Students will create an entertaining game.
Unit 6: Adventure Beta	<ul style="list-style-type: none">• Students will modify an existing game to include more interactivity

	<ul style="list-style-type: none"> • Students will design and implement an explosion and key objectives. • Students will program path movements for enemy obstacles. • Students will program the proper function to provide the player with three lives.
Unit 7: Gravity	<ul style="list-style-type: none"> • Students will program action qualifiers. • Students will program player movement by testing the proximity of solid objects relative to the player. • Students will program platforms and simulate gravity in a virtual world.
Unit 8: Jumping and Climbing	<ul style="list-style-type: none"> • Students will program gravity simulation. • Students will manipulate vertical speed and gravity to simulate jumping in a virtual world. • Students will program and refine climbing in a virtual world. • Students will program intuitive movement keys for ergonomic gameplay.