Curriculum at a Glance

Video Game Design 2

Grade 11-12

This course will share introductory game design techniques enabling the student to assemble interactive and engaging experiences for the users of their systems and applications. As part of the learning experience, students will gain valuable skills while using the Unity 3D application development environment. Concepts that will be covered include: lighting effects, rendering video, special effects such as explosions and glow, and editing video and sound. The final project is to create an animation that teaches a lesson.

Unit Description	Content and/or Skills
STEM Mathematics Application	• Students will apply isometric concepts to their game • Students will use algebra and geometry to solve real-world problems • Students will explain the relationship between the sides to a right triangle • Students will apply the Pythagorean theorem solve real-world problems
Scrolling and Camera View in Platform Games	• Students will create a scrolling video game • Students will explain how a changing the camera view can highlight important actions in the game • Students will learn how to adjust the scrolling speed of a game • Students will critically evaluate their work and the work of peers
Programming with Game Maker Language (GML)	• Students will define important vocabulary used in video-game-design programming • Students will demonstrate understanding of the underlying programming code of a game
Top Down Driving - Motion	• Students will construct a simple top down game object • Students will program actions in their game • Students will use correct programming syntax • Students will develop an original game concept • Students will critically evaluate their work and the work of peers
Top-Down Driving - Line of Fire	• Students will use and apply image transparency masks • Students will program multiple objects to appear as a single object • Students will develop a video game according to required specifications • Students will critically evaluate their work and the work of peers

Top-Down Driving - HUD and Health	• Students will explain game rules within the context of a user interface • Students will create heads-up displays that includes score, health and lives • Students will create objects that have the ability to dynamically update during gameplay • Students will critically evaluate their work and the work of peers
Top-Down Driving - Advanced Targeting	• Students will demonstrate ability to control clockwise and counterclockwise sprite movement • Students will use image_index variables to program the movement direction of an object • Students will critically evaluate their work and the work of peers
Top-Down Driving - Mastery	• Students will design a game to test customer-desired features • Students will explain different roles on a game-design team • Students will design an original game to customer specifications • Students will demonstrate thorough knowledge of game programming