Introduction to
Video Game Development

COURSE OUTLINE

Course Description

This class will give students a foundation in game design, programming, art, and sound. Students will be introduced to common game engines and then spend most of the class building a simple 3D game in Unity using existing assets. By the end of the course, each student will have a playable game they can run on any standard computer.

01 Introduction to Game Development
- History and genres of video games
- The game development pipeline
- Game engines (Unity, Unreal, Godot, etc)
- Setting up the development environment

02 Game Design Fundamentals
- Core game mechanics
- Balancing challenge and reward
- Storytelling and player engagement

03 Unity Basics
- Unity interface and workflow
- Creating and managing scenes
- Using the GameObject and Component system
- Setting up cameras and lighting
- Hands-on: create a new project and set up the camera

04 Working with Assets
- Importing 3D models, textures, and materials
- Character controls and animation

- Introduction to physics and collisions
- Hands-on: import the assets used in our sample game

05 Programming (C# Basics)
- Variables, functions, and events
- Controlling player movement
- Scripting interactions with the environment
- Debugging and testing in Unity
- Hands-on: code a simple character controller

06 Sound & User Interface
- Adding background music and sound effects
- Creating menus, HUDs, and score displays
- Hands-on: add a simple game menu and sound effects

07 Putting it all together: Building a Playable Game
- Adding enemies and score board
- Debugging and testing
- Build an executable file of the game

08 Questions & Comments