



Advanced Diploma in

GAME DEVELOPMENT

— WITH —

UNREAL ENGINE 5

DURATION:
2 MONTHS
(8 WEEKS)

PROGRAM OVERVIEW

This intensive 2 month program is designed to provide students with practical knowledge of Unreal Engine 5 and modern game development workflows. Students will learn environment creation, Blueprint visual scripting, gameplay mechanics, UI design, AI systems, and game publishing while building a complete playable project.

WEEK 1: Unreal Engine Foundations

Module 1:

- ▶ Introduction to Game Development
- ▶ Development Understanding
- ▶ Game Development Pipelines
- ▶ Game Loops and Components
- ▶ Introduction to Game Engines
- ▶ Unreal Engine Ecosystem Overview

Module 2:

- ▶ Installing and Configuring Unreal Engine
- ▶ Epic Games Launcher Setup
- ▶ Unreal Engine 5.5.4 Installation
- ▶ Hardware Requirements and Configuration

Module 3:

- ▶ Project Creation and Templates
- ▶ Third Person and First Person Templates
- ▶ Blank Blueprint Projects
- ▶ Project Structure and Folder Organization

Module 4:

- User Interface and Navigation
- Viewport Navigation
- Hotkeys and Shortcuts
- Panels and Workspace Layout

Module 5:

- Transformations and Actor Placement
- Moving, Scaling and Rotating Actors
- World and Local Coordinates
- Snapping Tools

Module 6:

- Modeling Tools
- Introduction to Modeling Mode
- Selection Modes
- Creating Basic Shapes
- Blockout and Level Prototyping



WEEK 2: Environment Design and Materials

Module 1:

- Landscape Creation
- Landscape Tools
- Terrain Sculpting
- Hills and Valleys Creation
- Landscape Editing

Module 2:

- Foliage System
- Painting Trees and Vegetation
- Grass and Rock Placement
- Performance Optimization

Module 3:

- Material Fundamentals
- Material Editor
- Scalar and Vector Parameters
- Master Materials
- Material Instances

Module 4:

- Advanced Materials
- Landscape Materials
- Layer Blending
- Light Functions

Module 5:

- Lighting and Atmosphere
- Lumen Global Illumination
- Directional Lighting
- Sky Atmosphere
- Exponential Height Fog
- Post Process Volumes
- Environment Enhancement

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Month 2: Gameplay Development and Publishing

WEEK 2: Blueprint Scripting and Gameplay Systems

Module 1:

- Blueprint Fundamentals
- Variables and Data Types
- Functions and Events
- Blueprint Graphs
- Blueprint Communication

Module 2:

- Physics and Collision
- Trigger Volumes
- Collision Systems
- Overlap Events
- Physics Simulation

Module 3:

- Coin Collection System
- Rotating Coin Actor
- OnComponentBeginOverlap Event
- Score Management
- Destroying Actors

Module 4:

- Interactive Door System
- Trigger Boxes
- Timelines
- Smooth Animation and Movement
- Player Interaction



Module 5:

- ▶ Character Blueprint
- ▶ Creating Custom Characters
- ▶ Character Movement Component
- ▶ Enhanced Input System
- ▶ Input Mapping
- ▶ Physics and Collision
- ▶ Trigger Volumes
- ▶ Collision Systems
- ▶ Overlap Events
- ▶ Physics Simulation

WEEK 2: UI, AI and Deployment

Module 1:

- ▶ User Interface Development (UMG)
- ▶ Widget Blueprints
- ▶ Main Menu Creation
- ▶ In Game HUD
- ▶ Health Bars and Score Display



Module 2:

- ▶ Enemy AI Fundamentals
- ▶ Navigation Mesh (NavMesh)
- ▶ AI Characters
- ▶ AI Move To Node
- ▶ Player Chase Behaviour

Module 3:

- ▶ Project Settings
- ▶ Input Configuration
- ▶ Default Maps
- ▶ Game Icons
- ▶ Project Optimization

Module 4:

- ▶ Packaging and Build Process
- ▶ Packaging Windows Executables
- ▶ Build Settings
- ▶ Common Packaging Errors



Module 5:

- ▶ Game Publishing
- ▶ Preparing Final Build
- ▶ Publishing on Itch.io
- ▶ Distribution and Showcase
- ▶ Capstone Project

Students will build and publish a complete playable game prototype featuring:

- ▶ Environment Design
- ▶ Materials and Lighting
- ▶ Blueprint Gameplay Systems
- ▶ Character Controls
- ▶ Collectible System
- ▶ Interactive Objects
- ▶ Enemy AI
- ▶ User Interface
- ▶ Windows Packaging
- ▶ Publishing on Itch.io
- ▶ Career Development & Placement Assistance with our Scriber Platform
- ▶ Portfolio Development
- ▶ Professional Project Presentation
- ▶ Game Publishing on Itch.io
- ▶ Portfolio Building and Showcase
- ▶ Freelancing and Remote Work Opportunities



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