Course Outline: NTUN101 - Unity Game Development I

Course Overview

This hands-on course empowers participants to design, build, and deploy games and interactive experiences using Unity and C#. Learners gain practical experience in designing captivating 3D games, implementing gameplay mechanics. The curriculum emphasizes real-world coding skills and asset management, equipping both beginners and intermediate developers to create immersive, industry-ready games that stand out in today's market. No prior mobile or Unity experience is required, but familiarity with basic programming and computing environments is recommended.

Learning Outcomes

Participants completing this course will be able to:

- Master the fundamentals of Unity for game development using C# scripting.

- Build 2D and 3D interactive environments and game objects.

- Implement character controls, physics, and collisions.

- Incorporate UI elements and audio for engaging gameplay experiences.

- Apply best practices in debugging and game architecture.

Recommended Prerequisites:

Participants completing this course should have some prior knowledge of programming in another language such as Java, C++ or Python. C# would be an asset as well as development on another game engine would also be an asset.

Key Features

- Hands-on learning with guided projects and practical exercises.

- Up-to-date curriculum with Unity engine and C# scripting.

- Expert-led instruction by seasoned Unity developers.

- Flexible delivery: online and onsite options are available.

- Scalable content suitable for entry-level and intermediate developers.

Course Modules

- **Module 1: Introduction to Unity and C#**

  o Overview of game development and Unity project setup

  o Unity Editor fundamentals: scenes, game objects, assets

  o C# scripting basics: syntax, classes, variables, methods

- **Module 2: Building 3D Worlds**

  o Terrain and lighting

  o Integrating camera systems

  o Creating interactive environments

  o Minimaps

- **Module 3: Gameplay Mechanics**

  o Implementing movement, physics, and collisions

  o Creating game logic and state management

- **Module 4: User Interfaces and Scene Management**

  o UI elements: menus, HUDs, buttons

  o Managing player feedback

  o Scene Management

- **Module 5: Audio and Effects**

  o Adding sound effects and music

  o Trigger-based audio integration

Agenda

Time	Day 1	Day 2	Day 3	Day 4
8:00am	*Networking & Coffee*	*Networking & Coffee*	*Networking & Coffee*	*Networking & Coffee*
9:00am	M0: Introduction to Unity & Unity Hub	M3: Terrains Game3: Terrain World	M5: Game Audio Game5: Music & SFX	M7: Physics Continued Game7: Continued
10:15am	*Coffee Break*	*Coffee Break*	*Coffee Break*	*Coffee Break*
10:30am	M1: Unity Fundamentals Game1: Hello World	Applied Exercise 2	M6: Game Assets Game6: Game Assets	Course Review
11:45am	*Networking & Lunch*	*Networking & Lunch*	*Networking & Lunch*	*Networking & Lunch*
1:00pm	M2: Camera & Minimaps Game2: Camera Switcher	M4: User Interfaces & Scenes Game4: Game Shell	M7: Physics Game7: Physics	Applied Exam
2:15pm	*Coffee Break*	*Coffee Break*	*Coffee Break*	*Coffee Break*
2:30pm	Applied Exercise 1	Applied Exercise 3	Applied Exercise 4	Applied Exam
3:45pm	*Recap*	*Recap*	*Recap*	*Recap*