UNITY 3D with Metaverse

1. INTRODUCTION TO Mixed Reality (AR & VR)

- What is Virtual Reality (VR)
- What is Augmentedreality(AR)
- What is MixedReality
- Modern VR/AR experiences
- History

2. OVERVIEW

- Hardware
- Software
- Interaction fundamental

3. Types of HolographicApps

- Enhanced environment apps
- Virtual environment apps
- Blended environment apps

4. Introduction to Unity 3D

ï Getting to Know the Unity Editor
- The Project Dialog
- The Unity Interface
- The Project View
- The Hierarchy View
- The Inspector View
- The Scene View
- The Game View
- Honorable Mention: The Toolbar

ï Navigating the Unity Scene View
- The Hand Tool
- Flythrough Mode

5. Game Objects

ï Dimensions and Coordinate Systems
- Putting the D in 3D
- Using Coordinate Systems
- World Versus Local Coordinates

- Game Objects

- Transforms
  - Translation
  - Rotation
  - Scaling
  - Hazards of Transformations
  - Transforms and Nested Objects

6. Models, Materials, and Textures

- The Basics of Models
  - Built-In 3D Objects
  - Importing Models
  - Models and the Asset Store
- Textures, Shaders, and Materials
  - Textures
  - Shaders
  - Materials
  - Shaders Revisited

7. 3D Terrain

- Terrain Generation
  - Adding Terrain to Your Project
  - Heightmap Sculpting
  - Unity Terrain Sculpting Tools
- Terrain Textures
  - Importing Terrain Assets
  - Texturing Terrain

8. Environments

- Generating Trees and Grass
  - Painting Trees
  - Painting Grass
  - Terrain Settings
- Environment Effects
  - Skyboxes
  - Fog
  - Lens Flares
  - Water
- Character Controllers
  - Adding a Character Controller
  - Fixing Your World

9. Lights and Cameras

- Lights
  - Point Lights
  - Spotlights
  - Directional Lights
  - Creating Lights Out of Objects
  - Halos
  - Cookies
- Cameras
  - Anatomy of a Camera
  - Multiple Cameras
  - Split Screen and Picture in Picture
- Layers
  - Working with Layers
  - Using Layers

Day 4 4 hours

10. Interactive World creation with Interaction 1:

- Design
  - The Concept
  - The Rules
  - The Requirements
- Creating the Game World
  - Sculpting the World
  - Adding the Environment
  - The Character Controller
- Gamification
  - Adding Game Control Objects
  - Adding Scripts
  - Connecting the Scripts Together
- Playtesting

- Arithmetic Operator

11. Collision

- Rigidbodies
- Collision
  - Colliders
  - Physics Materials
- Triggers
- Raycasting

12. Prefabs

- Prefab Basics
  - Prefab Terminology
  - Prefab Structure
- Working with Prefabs
  - Adding a Prefab Instance to a Scene

- Inheritance
- Instantiating Prefabs Through Code

Day 5- 4rs

13. User Interfaces
- Basic UI Principles
- The Canvas
  - The Rect Transform
  - Anchors
  - Additional Canvas Components
- UI Elements
  - Images
  - Text
  - Buttons
- Canvas Render Modes
  - Screen-Space Overlay
  - Screen-Space Camera
  - World Space

14. Particle Systems

- Particles
  - Unity Particle Systems
  - Particle System Controls
- Particle System Modules
  - Default Module
  - Emission Module
  - Shape Module
  - Velocity over Lifetime Module
  - Limit Velocity over Lifetime Module
  - Collision Module
  - Sub Emitter Module
  - Texture Sheet Module
  - Renderer Module
- The Curve Editor

Day 6 3 hours

15. Animations

- Animation Basics
  - The Rig
  - The Animation
- Animation Types
  - Creating the Animation
- Animation Tools
  - Animation Window
  - Creating a New Animation
  - Record Mode
  - The Curves Editor

16. Animators

- Animator Basics
  - Rigging Revisited
  - Importing a Model
- Configuring Your Assets
  - Rig Preparation
  - Animation Preparation
- Creating an Animator
  - The Animator View
  - The Idle Animation
  - Parameters
  - States and Blend Trees
  - Transitions
- Scripting Animators

Day 7 3 hours

17. Audio

- Audio Basics
  - Parts of Audio
  - 2D and 3D Audio
- Audio Sources
  - Importing Audio Clips
  - Testing Audio in the Scene View
  - 3D Audio
  - 2D Audio
- Audio Scripting
  - Starting and Stopping Audio
  - Changing Audio Clips

Day 8-3 hrs

18. Publish and Deploy

- Managing Scenes
  - Establishing Scene Order
  - Switching Scenes
- Persisting Data and Objects
  - Keeping Objects
  - Saving Data
- Unity Player Settings
  - Cross-Platform Settings
  - Per-Platform Settings
- Building Your Game
  - Build Settings

Day 9 3 hours

19. VR Projects Examples

- Ray cast and Gaze control
- Using AI Third Person Controller
- Working with UI
- Working with VR Sample Assets
- Unity Integration with VR (OCULUS RIFT)

- Introduction to oculus rift
- Rendering the field of view
- The oculus sdk and rift interaction

20. Unity Integration with Alt space

Day 10 and 11 6 hrs

21. Standalone Unity METAVERSE Experience development from scratch

- Introduction to Metaverse
- Working with SDK
- Understanding trigger
- Creating Room
- Implement a user interface
- Multiplayer
- Vr player movement
- Oculus quest development
- Vr keyboard
- Vr avatar selection syste,m
- Build and Share Projects from Unity3D

Note – This course does not cover Scripting in unity with C# or JavaScript's – This course

uses pre built Scripts / Examples for additional functionalities.

Specifications /Requirements /Perquisite :-

- We will be training on unity 20
- Needed Basic knowledge of 3d lTSsoftware
- Basic knowledge /understanding on c# will be plus point
- Familiar with design ,user interface and user behaviours will help.