



# AR & VR Training

## **Course Overview:**

Augmented Reality and Virtual Reality Courses were designed by specialists who are experts in this domain. This AR and VR course makes you learn all the core concepts of AR and VR like 3D software elements, image editing, VR simulation application, unity 3D game engine, AR VR Course marketing strategy, and so on. After finishing the theoretical concepts you will make working on real-time industry projects and case studies. At the end of this Augmented reality and virtual reality course, globally approved AR VR certification is awarded which aids in getting jobs as AR and VR engineer.

## **Training Features:**

- 8X higher interaction in live online classes conducted by industry experts
- 90 Hrs. live Classes of AR VR with Interview Preparation
- 3 real-time industry projects with hands-on preparation
- Unlimited Interview Opportunities with Placement Support
- Industry-recognized course completion certificate

## **Delivery Mode:**

- Online Live Virtual Instructor Led Training

## **Target Audience:**

Working professionals like software developers, and web designers can take this AR and VR course. Any individual with a minimum qualification degree who is willing to excel in their career in augmented reality and virtual reality can take this course

## **Key Learning Outcomes:**

The important concepts that are covered during this AR and VR course is:

- Image-editing software
- 3D software & Elements, 3D game engine
- Collect, Visualize and Create Assets for ar and vr
- VR simulation application
- Client server application architecture
- Integrate, Validate & Deploy ar and vr applications.

## **Certification Details:**

- Complete at least 85 percent of the course or attend one complete batch
- Successful completion and evaluation of the project

## Curriculum

### Introduction to Augmented Reality

- Introduction
- Related Technologies
- AR vs. MR & VR
- Steps for AR
- AR Triggers
- Content Placement

### AR Basics

- Introduction
- AR SDKs
- Redux
- Technica
- ARToolkit
- ARToolkit Part II
- Vuforia
- AR in Gaming

### Augmented Reality for Marketing/Promotion

- Introduction
- Things to Keep in Mind
- Vuforia

### AR in the Enterprise

- Introduction
- What AR in the Enterprise Can Do
- Enterprise Considerations
- Microsoft HoloLens and Spatial Mapping
- Building the Visual Studio Project
- Exporting the Spatial Map

### Augmented Reality Features

- Introduction
- Other Future AR Technologies
- Virtual Retina Display2m 9s

## Virtual Reality Curriculum

- Understanding the concept of virtual reality
- Overview of the developments in virtual reality over the years
- Getting acquainted with hardware and software requirements for virtual reality
- Understanding the physiological aspects and perception
- Installing and configuring Unity Engine
- Learning sprites and physics joints in Unity
- Building a terrain in Unity using the built in terrain tool set
- Understanding raycasting and rigidbody
- Deploying a scene on Google Cardboard
- Learning unity particle systems for enhanced effects
- Creating the user interface for a virtual environment
- Configuration of Oculus Rift
- Installing the Oculus software development kit
- Deploying a scene on Oculus Rift

## VIRTUAL REALITY WITH UNITY 5 (Oculus Rift and Google Cardboard)

### INTRODUCTION TO VR

- What is a virtual reality
- Modern VR experiences
- History

### OVERVIEW

- Hardware
- Software
- Human physiology and perception

### VISUAL PERCEPTION

- Perception of depth
- Perception of motion
- Perception of color
- Combining sources of information

### Introduction to Unity

- 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 <br>
- Honorable Mention: The Toolbar
- Navigating the Unity Scene View
- The Hand Tool o Flythrough Mode

## Game Objects

- 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

## Models, Materials, and Textures

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

## 3D Terrain

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

## 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

## Lights and Cameras

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

## Game 1: Amazing Racer

- 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 o Connecting the
- Scripts Together
- Playtesting

## Collision

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

## Prefabs

- Prefab Basics
- Prefab Terminology
- Prefab Structure
- Working with Prefabs
- Adding a Prefab Instance to a Scene
- Inheritance
- Instantiating Prefabs Through Code

## 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

## Animations

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

## 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

## 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

## Game Coin Collection

- Design o The Concept
- The Rules o The Requirements
- The Arena o Creating the Arena
- Texturing o Finish the Arena
- Game Entities
- The Player
- Coins o The Colored Coins
- The Control Objects
- The Goals
- The Game Controller
- Improving the Game

## 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

## 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
- Integrating oculus unity integration package Note
- This course does not cover Scripting in unity with C# or JavaScript
- This course uses pre built Scripts for additional functionalities.