



## **UNITY CERTIFIED USER – VR DEVELOPER**

### **About the programme:**

The objective of this course is to explore the concepts of virtual reality and develop a 3D virtual environment. The programme extensively trains learners to become AR/ VR developers, and work with video game engines such as Unity. This platform allows students to recreate environments in 3D. Besides, the course also focusses on programming languages such as C++, C#, etc.

### **Programme outcomes:**

Upon successful completion of this course, students will be able to:

- Generate innovative ideas, and go beyond the obvious and predefined related to Game
- Create VR experiences for different Use case
- Create code for VR simulations and games

### **Duration of the programme:**

Hours: 200

Months: 6

### **Course syllabus:**

#### **Module 1: Setup**

Implement package management for enabling VR, including but not limited to the package manager and the asset store

Configure project settings according to VR platform requirements

Given a scenario, determine the appropriate rendering pipeline to use for a low-and/ or a high-powered headset, including but not limited to the HD render pipeline and universal render pipeline

Identify the default Unity object scale in relation to real-world scale

Module outcome: Gain knowledge on package management, project settings and scenarios.

**Module 2: Interaction**

Assess a VR UI based on Unity VR best practice, including but not limited to comfort, menu creation and projection, and physical UI interaction

Given a scenario, determine the components needed for a user to physically manipulate objects – author notes: using colliders, triggers, and rigid bodies

Compare multiple types of head tracking found in common VR equipment and the degrees of freedom allowed by the equipment

Given a scenario, determine the appropriate locomotion techniques to be used, including but not limited to teleporting, constant movement, room scale, and stationary — author notes: design decisions should be provided to user in the scenario

Explain the use of spatialised sound and how to implement it

Module outcome: Gain knowledge on Unity VR best practices, component management for scenarios and spatialised sound.

**Module: Optimisation**

Given a scenario, determine how to optimise a texture

Identify the effect of poly count on run time

Identify the effect of particles and visual effects on run time

Identify the effect of lighting and shadows on run time

Predict the effect of latency to the user experience

Module outcome: Gain knowledge on texture, poly count on runtime, effects of lighting, shadows and latency.

**Certification process:**

ASAP will conduct a final certification examination.

**Institutional Partner:** Additional Skill Acquisition Programme (ASAP) Kerala is a Section-8 Company of the Department of Higher Education, Government of Kerala, that focusses on skilling students and the general community to enhance their employability. Instituted in 2012, ASAP Kerala transitioned to a company under the Companies Act, 2013, in 2021.