



## Virtual Reality 7-9 Syllabus

### Course Goals

#### 1 VR Technology

Students use a virtual reality headset and peripheral controller to navigate an assortment of educational and entertaining experiences, as well as play-test their own projects.

#### 2 Exploration

Students explore different scientific fields, historical eras, and world landmarks in a variety of engaging apps.

#### 3 Creativity

Students create and share artistic projects in virtual reality.

#### 4 Unity

Students use the Unity platform to design and code 3D applications for VR.

### Course Topics

#### 1 Intro to VR

Students try out apps which familiarize them with the VR environment and several different control schemes.

#### 2 Science

Students use immersive apps to explore outer space, the ocean floor, and inside the human body.

#### 3 Geography

Students travel the globe, visiting landmarks worldwide.

#### 4 History

Students learn about cultures and mythology of the past, brought to vibrant life in VR.

#### 5 Art & Design

Students paint and sculpt in VR, and tour virtual art galleries.

#### 6 Problem-Solving

Students tackle assorted puzzles, developing critical thinking and having fun along the way.

#### 7 3D Animation

Students create and manipulate 3-dimensional objects in the Unity environment.

#### 8 Programming

Students learn to code in Unity to complete their VR projects.

### Course Schedule

## Day 1

### Course Rules and Introduction

Students are introduced to course rules, their classmates, and the instructor.

### Oculus Go Tutorial

Students learn the basic controls to operate their VR headsets.

### Welcome to Virtual Reality

Students view a short film introducing the many possibilities presented by VR tech.

### A Night Sky

Students use their controllers to connect-the-stars and bring constellations to life

### Coaster Combat

Students hone their hand-eye coordination in this fast paced target practice game.

### Maze VR

Students twist and turn to navigate mazes in virtual reality.

### Wonderglade

Students play as assortment of mini-games demonstrating the many different ways the Oculus Go controller can be used.

## Day 2

### Ocean Rift

Students dive beneath the waves to encounter sea life of all kinds.

### Mission ISS

Students join the crew of the International Space Station, maneuvering inside and outside the craft in zero gravity.

### Titans of Space

Students tour our Solar System and visit some of the most gargantuan star systems beyond.

## Day 3

### Geoget

Students compete to locate countries on a globe.

### Masterworks

Students tour historic cultural landmarks, including Mount Rushmore and the ancient capital of Thailand.

### Wonders of the World

Students interact with ancient communities to learn about their staggering architectural achievements.

### Smithsonian Journeys: Venice

Students tour the historic city of Venice, Italy accompanied by a guide.

### Gala 360: Rome in 3D

Students tour ancient Roman landmarks and learn about their place in history.

## Day 4

### Land's End

Students travel beaches, caverns, and tundra, solving puzzles to move from checkpoint to checkpoint.

### Keep Talking and Nobody Explodes

Students work together, both on-headset and off, to disarm a bomb.

### A World of Mine Own

Students explore and build in Minecraft VR.

## Day 5

### Paint VR

Students paint in three dimensions in this innovative app.

### Sculptr VR

Students use different materials to sculpt in 3D.

### Sketchfab

Students tour a virtual gallery filled with 3D models of all shapes, sizes, and subjects.

### Städel Time Machine

Students explore an historic German art museum.

### Meeting Rembrandt

Students encounter the renowned Dutch painter in his workshop and learn the origins of one of his most famous works.

## Day 6

### Getting Started with Unity - Your First Export

Students use Unity to export and test a sample scene on their headsets.

### Getting Started with Unity - Roll-a-Ball VR

Students build a simple game in Unity and then incorporate VR functionality.

## Day 7

### Unity Project: Target Practice

Students edit a sample VR project to create a target shooting game.

## Day 8

### Final Project Part 1: Look Where You're Going

Students create a custom terrain and make it explorable in VR.

## **Day 9**

### **Final Project Part 2: Put One Foot In Front of the Other**

Students write a script to let them "walk" around their custom environment.

## **Day 10**

### **Final Project: Finishing Touches**

Students finish their final terrain projects and build them to the headsets.

### **Back to Reality**

Students put away their equipment and discuss future applications of VR technology.

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