



PROGRAM SYLLABUS

VR Developer Foundations

8-Week Live Online Course

XRTERRA.COM

Program Overview

XR Terra is proud of the live instruction it provides to students.

Where larger concepts can be learned in a self-paced format such as video tutorials, the hardest parts of development are understanding why things aren't working, which is faster with an experienced eye.

That's why XR Terra offers live troubleshooting support during class and after it.



VR Developer Foundations

8-WEEK PROGRAM

This 8 week learning journey with live instruction and support will get students started with everything they need to build Virtual Reality projects in Unity.

The course uses hands-on exercises designed to showcase basic features. Students learn the essential components of Unity's framework, receive a formal introduction to C#, navigate documentation and troubleshooting, work with assets like 3D models and textures, and create satisfying XR interactions.

After completing this course, students will have a video of a portofolio piece and be well prepared to take XR Terra's VR Industry Bootcamp.



Program Structure

This 8-week course includes live instruction once a week, as well as optional workshop time once a week and schedulable office hours with the instructor.

COURSE EXPECTATIONS

- > 3 hours of weekly live instruction
- > 1-2 hours of self-study per week, including schedulable office hours with instructor

Office hours are held each week and can also be scheduled Discussion forums for questions to instructors and student services advisors Continued alumni support and regular workshops post course completion

Grading

This is a Pass / Fail program. In order to pass this program you must complete the following:

- > Attend live sessions; maximum of 2 excused absences during the program
- > Complete all assignments and group exercises
- > Complete all projects in a timely manner following the guidelines



Student Learning Outcomes

- Confidently navigate the essential components of the Unity framework
 - Understand basic programming concepts and the specifics of C#
 - Debug and troubleshoot Unity and C# errors
- Create satisfying virtual reality interactions in Unity
- Work with a variety of assets, including images, videos, animations, and 3D models

A Career in XR

After completion of the VR Developer Foundations, you will get access to join XR Terra's Alumni and future Industry Hackathons.

XR Terra's Industry bootcamps prepare you with the portfolio & skills need to join the competitive XR Industry & Jobs Market.



After successful completion of the course, students will be awarded a digital certificate from XR Terra and a digital badge to share on LinkedIn.

Program Prerequisites

- This course is open to beginners and assumes limited or no programming experience.
- Students with a background in business or technology such as Developers, Product Managers, Operation Managers are also encouraged to take this course to help establish an understanding and appreciation for XR.



Materials and Supplies

REQUIRED HARDWARE

- > Mac or PC with Internet Connectivity
- Oculus Quest (Suggested)
- Scroll Wheel Mouse (Suggested)
- Webcam

Program Schedule

The first four weeks focus on developing basic VR development skills within Unity, including moving objects around in 3D space, applying materials, writing C# scripts, importing the necessary XR packages, saving and instantiating prefab assets, and detecting physics collisions and triggers.

	VR Foundations Developer
WEEK 1	 Construct a character out of primitive objects and materials in the Unity 3D engine Download Unity and create a new project Introduce objects, transforms, and hierarchy Practice moving camera and objects around the Scene window Apply colors and textures to an object using materials assets
WEEK 2	 Introduction to C# scripting and object oriented programming in Unity Create your first C# script Put messages into the Console Define variables and references Execute code every frame Define functions with parameters and return values
WEEK 3	 Make a VR Scene using the XR Interaction Toolkit and OpenXR Use the XR Interaction Toolkit to create a VR Scene Implement locomotion and movement mechanics Grab and throw objects Use Interactable UnityEvents to trigger custom functions Use the XR Device Simulator to control a VR scene using the keyboard and mouse
WEEK 4	 Detect collisions and triggers using Unity's physics system and instantiate prefabs through code Create and edit Prefab assets Instantiate Prefabs into your scene during runtime Detect physics collisions and triggers through code Destroy objects when colliding with another object that uses a custom tag



Program Schedule

The second half of the course dives into more advanced coding concepts by using the VR Fabricator final project. Students write custom scripts, create custom animations and trigger them through code, store objects in lists and arrays, and use coroutines to execute code over time. By the end of this course you'll be comfortable writing scripts and have a solid VR portfolio piece.

VR Foundations Developer

WEEK 5 Begin the VR Fabricator, the final project that allows the user to customize an object before grabbing it to bring into the scene

- Learn about the Singleton script architecture
- Maintain references to spawned Prefab assets
- · Create a menu that can be grabbed and repositioned

WEEK 6 Explore more advanced coding techniques such as coroutines and loops that allow you to run code over time or arrays and lists that let you manage prefabs through code

- · Implement a button that destroys all spawned objects over a short period of time
- Create a VR Slider using transform and vector math
- Control the time of day with a procedural skybox

WEEK 7 Create custom animations from within Unity, and trigger them through code. Set up hands that animate when you press buttons on the VR controller

- Create an animation clip
- · Set up the animator controller to trigger the animation when a button is pressed
- · Hand models that animate from controller inputs by listening to Input Action events

WEEK 8 Final Presentations!

- · Record your VR experience for your portfolio or demos using the Unity Recorder
- · Present your VR Fabricator to your peers





For questions, please email hello@xrterra.com

