

Unity 3D Programming

Syllabus

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Overview: Are you ready to take your programming skills into the next dimension? Learn how to create dynamic Unity™ 3D games using the same industry-standard developing engine as professionals. You will create two fully executable games that can be played on many platforms and added to your digital portfolio.

Learning Outcomes: *Students will demonstrate proficiency with...*

- Navigating Unity™ Interface
- Utilizing the Unity™ Interface
- Building Two Games using Unity™

Length of Course: Between 80 and 120 hours of coursework

Assessments Include: Formative and Authentic

Software Required: Unity

Modules	Lessons	Assignments
1 Getting Started with Unity	1 Unity Project Fundamentals 2 More Unity Basics 3 Scripts in Unity Workshop Challenge	<ul style="list-style-type: none">● Activity: In Their Own Words● Project: My First Unity Project● Discussion: Thoughts on Unity● Project: Workshop Challenge Assignment
2 Ball Bouncer Game	4 Overview 5 Start Screen 6 Game Screen 7 End Game	<ul style="list-style-type: none">● Discussion: Rotating Background● Quiz: Module 2 Unity Basics
3 Bounce a Ball	8 Create the Ball 9 Add Collision Walls 10 Code the Drop	<ul style="list-style-type: none">● Discussion: Explore the Rigidbody Component● Discussion: Explore Physics Materials● Quiz: Module 3 – Bounce a Ball● Project: Module 3 Completed
4 Add the Cannon and Goal	11 Add the Cannon 12 Add the Goal	<ul style="list-style-type: none">● Project: Module 4 Completed● Quiz: Module 4
5 Layout Level 1	13 Add Obstacles 14 Adding the Score	<ul style="list-style-type: none">● Project: Module 5 Completed● Quiz: Module 5
6 Win Lose	15 Set Win Lose 16 Finish Game Play	<ul style="list-style-type: none">● Project: Module 6 Completed● Quiz: Module 6
7 Add Levels	17 Add Levels	<ul style="list-style-type: none">● Project: Add Levels Workshop
8 Project Maze	18 Overview 19 Set Up the Camera 20 Script the Camera	<ul style="list-style-type: none">● Project: Module 8 Completed● Quiz: Module 8

9 Collecting	21 Setting Up the Pellets	<ul style="list-style-type: none"> ● Project: Module 9 Completed ● Discussion: Reusable Code ● Quiz: Module 9
10 Portals	22 Portals	<ul style="list-style-type: none"> ● Project: Module 10 Completed ● Quiz: Module 10
11 Keys	23 Create the Keys 24 Collect the Keys	<ul style="list-style-type: none"> ● Project: Module 11 Completed ● Quiz: Module 11
12 Wheels and Gems	25 Create Wheels and Gems 26 Code It All Part I 27 Code It All Part II	<ul style="list-style-type: none"> ● Project: Create the Game ● Discussion: WheelObj Names ● Activity: Objects with Same Name ● Project: Module 12 Completed ● Quiz: Module 12
13 Blocks	28 Add Blocks	<ul style="list-style-type: none"> ● Project: Module 13 Completed ● Activity: Test Cases Results
14 UI	29 Add the UI	<ul style="list-style-type: none"> ● Project: Module 14 Completed ● Quiz: Module 14
15 Win Lose	30 Win State 31 Lose State 32 Start and End Screens	<ul style="list-style-type: none"> ● Activity: Calling TestGems ● Project: Maze Game Completed
16 Evaluation	33 Playtest the Game 34 Evaluate the Game 35 Make it So	<ul style="list-style-type: none"> ● Activity: Playtest Evaluation ● Activity: Plan for Game Improvements ● Discussion: Tweaked Maze Game ● Project: Tweaked Maze Game
<p>Final Exam – Multiple Choice Final Exam – Essay</p>		