

Unity 3D Programming

Content Standards

Course Goals	<p>Upon completing the Unity 3D Programming course, students will demonstrate proficiency with:</p> <ul style="list-style-type: none"> ● Navigating the Unity™ interface ● Manipulating 3D space to build a completely executable 3D game ● Writing and apply script components using the Unity Javascript language
Content Standards	
Module 1 Getting Started with Unity	<ul style="list-style-type: none"> ● Create and saving a new scene ● Load and opening a scene ● Build a stand alone executable file
Module 2 Ball Bouncer Game	<ul style="list-style-type: none"> ● Apply Javascript skills <ul style="list-style-type: none"> ○ Manage switching between scenes ● Recognize scenes attributes <ul style="list-style-type: none"> ● Use scenes to control game flow
Module 3 Bounce a Ball	<ul style="list-style-type: none"> ● Apply Javascript skills <ul style="list-style-type: none"> ○ Work with Collisions ○ Work with variable syntax in Javascript ● Use Primitives to create simple game objects <ul style="list-style-type: none"> ● Use Prefabs to build complex game elements
Module 4 Add the Cannon and Goal	<ul style="list-style-type: none"> ● Apply Javascript skills <ul style="list-style-type: none"> ○ Use 2D mouse data to control an object's position in 3D space ○ Utilize the gaming concept of a Spawn Point ○ Constrain movement within a range ○ Manage a collision event
Module 5 Layout Level 1	<ul style="list-style-type: none"> ● Apply Javascript skills <ul style="list-style-type: none"> ○ Examine collision needs ○ Further explore with prefabs and GUI objects
Module 6 Win-Loss	<ul style="list-style-type: none"> ● Apply Javascript skills <ul style="list-style-type: none"> ○ Create Persistent Data to store score and levels completed ○ Add player feedback to the end screen ○ Set the win / lose state
Module 7 Add Levels	<ul style="list-style-type: none"> ● Apply Javascript skills <ul style="list-style-type: none"> ○ Create new levels for the game ● Playtest the game <ul style="list-style-type: none"> ○ Add level progression

<p>Module 8 Project Maze</p>	<ul style="list-style-type: none"> ● Enable and Disable objects ● Apply Javascript skills ○ Read input from the keyboard ● Add New Collider - the Character Controller ○ Move an object in 3D space
<p>Module 9 Collecting</p>	<ul style="list-style-type: none"> ● Apply Javascript skills <ul style="list-style-type: none"> ○ Send Messages between game object and/ or scripts ○ Use common scripts for generic functions ○ Examine the for loop syntax ○ Examine the switch statement syntax
<p>Module 10 Portals</p>	<ul style="list-style-type: none"> ● Apply Javascript skills <ul style="list-style-type: none"> ○ Portals - transport the player within the game ○ Data Structure - Build arrays in JavaScript
<p>Module 11: Keys</p>	<ul style="list-style-type: none"> ● Apply Javascript skills <ul style="list-style-type: none"> ○ Keys - Collect one object to unlock another ○ Data Structure - Create dictionaries in JavaScript
<p>Module 12 Wheels and Gems</p>	<ul style="list-style-type: none"> ● Apply Javascript skills <ul style="list-style-type: none"> ○ Work with a model's sub parts ○ Use ranges to test non exact numbers ○ Change a material's texture in code ○ Use the mod function to handle wrap around effects with rotating object
<p>Module 13: Blocks</p>	<ul style="list-style-type: none"> ● Apply Javascript skills <ul style="list-style-type: none"> ○ Refine how collisions are handled
<p>Module 14: UI</p>	<ul style="list-style-type: none"> ● Apply Javascript skills <ul style="list-style-type: none"> ○ Review the div function ○ Use Invoke Repeating() for calling a function over and over with a delay
<p>Module 15 Win - Lose</p>	<ul style="list-style-type: none"> ● Apply Javascript skills <ul style="list-style-type: none"> ○ Add the exit object to the game ○ Add the start screen ○ Add persistent data to keep track of the win state and the time remaining ○ Add the win state ○ Add instructions to the start screen ○ Add the lose state ○ Add the end screen ● Playtest the game
<p>Module 16: Evaluation</p>	<ul style="list-style-type: none"> ● Playtest the game ● Iterate the game ● Evaluate playtesting data ● Analyze future career possibilities
<p>Unity 3D Programming I Final Exam - Essay, Unity 3D Programming I Final Exam - Multiple Choice</p>	