GAME DEVELOPMENT COURSE TRACK

GENERAL RESOURCES ACCESS PREREQUISITE

- [ ] ***General Orientation for the Melrose Center**
  This orientation is your key to accessing the creative and collaborative spaces in the Melrose Center. Get an overview of the Photography Studio, Video Production Studio, Audio Production Studio, FabLab and Simulation Lab. Explore upcoming classes and workshops and learn about the best practices to maximize your experience.

VR LEARNING STATIONS ACCESS PREREQUISITE

- [ ] ***VR Learning Station Orientation**
  Learn how to navigate the HTC Vive and Oculus Quest VR interface, how to launch and exit VR experiences and how to interact with objects in the VR environment.

GAME DEVELOPMENT

- [ ] **Unity Fundamentals**
  Learn the Unity Editor's Interface, how to navigate the 3D development environment and the basic workflow for creating video games in Unity.

- [ ] **Unity: Importing Assets**
  Learn how to import assets into a Unity project from the Unity asset store, third party assets stores, and developer made custom assets.

- [ ] **Unity: Basics of Programming**
  Learn the basics of programming custom behaviors for your game objects with C Sharp (C#) in Unity.

- [ ] **Unity: Input Actions**
  Learn how to capture values from an input device and use them to program your player game object to move, rotate and jump.

- [ ] **Unity: Controlling Animations**
  Learn how to create and program an Animator Controller to trigger animation clips with user input from an input device.

- [ ] **Unity: Trigger Events**
  Learn how to set up colliders as triggers and create interactions among objects in your game.

DEVELOPMENT ENVIRONMENT SETUP

- [ ] **Mobile App Development Basics**
  Learn how to set up a mobile app development environment, how to test and debug the mobile app during devel opment, and how to publish the app through a popular ap p store.

- [ ] **Magic Leap MR Development Basics**
  Learn how to setup and test your own Mixed Reality application for the Magic Leap headset using Unity and Magic Leap's Zero Iteration Device Simulator.

- [ ] **VR App Development Basics**
  Learn how to set up a VR development environment, how to test and debug the VR app during development, and how to publish the app through a popular app store.

GAME DEVELOPMENT COURSE TRACK

3D ANIMATION

☐ **Blender Fundamentals**
Learn to navigate Blender's workspace, manipulate 3D objects in a 3D environment, and an overview of the 3D creation pipeline.

☐ **Blender: Modeling a Character**
Learn to extrude, subdivide, and edit a mesh to create a humanoid character.

☐ **Blender: UV Mapping**
Learn to correct and extract the UV coordinates of a humanoid character's mesh.

☐ **Blender: Rigging a Character**
Learn to apply, modify, and define a skeletal structure of a humanoid character using the Rigify add-on.

☐ **Blender: Painting Weights**
Learn to correct the deformation of the humanoid character's mesh when the skeletal structure is animated.

☐ **Blender: Animating a Walk Cycle**
Learn to animate in Blender by animating the walk cycle of a humanoid character.

☐ **12 Principles of Animation in 3D with Blender**
Learn the 12 principles of animation and the influence they have had on 3D animation tools.

☐ **Motion Capture Animation Fundamentals**
Learn how to setup and use the Perception Neuron MOCAP system and retarget motion capture data to a digital character in Blender.

SERIES

☐ **Create a Spaceship LEGO® Microgame (3-Part)**
Learn how to use the Unity Game Engine by modding Unity's LEGO Microgame template.

☐ **Create an FPS Microgame (3-Part)**
Learn how to use the Unity Game Engine by modding Unity's FPS Microgame template.

☐ **Create an Obby Style Video Game (3-Part)**
Learn how to navigate the Unity Editor, manipulate game objects, and program custom behaviors while creating an obstacle course platformer video game.

☐ **Create an Escape Room VR Game (3-Part)**
Learn how to implement VR core concepts like locomotion, hand presence, and player immersion into an interactive VR experience while creating a VR Escape the Room Game.

☐ **Create 3D Animations in Blender (3-Part)**
Learn how to use Blender to create 3D animations by animating a bouncy ball and a humanoid character.