

IT-2400: UNITY GAME PROGRAMMING

Cuyahoga Community College

Viewing: IT-2400 : Unity Game Programming

Board of Trustees:

2013-05-23

Academic Term:

Fall 2018

Subject Code

IT - Information Technology

Course Number:

2400

Title:

Unity Game Programming

Catalog Description:

An introduction to scripting with Unity focusing on the programming skills needed to translate game design principles into a fully-functional game.

Credit Hour(s):

3

Lecture Hour(s):

2

Lab Hour(s):

2

Requisites

Prerequisite and Corequisite

VCIM-1400 Game Design II: Game Engines, or departmental approval.

Outcomes

Course Outcome(s):

Develop, refine and evaluate a game with the appropriate digital or analog tools to produce the final product for a chosen gaming platform.

Essential Learning Outcome Mapping:

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Objective(s):

1. Use requirements to develop and test a Unity game
2. Demonstrate use of scripting to control assets within a game
3. Use scripting to control physics components within a game
4. Demonstrate an understanding Object-Oriented Programming concepts as they apply to the Game object
5. Demonstrate the use of Particle Components scripting to control external force on an object

Methods of Evaluation:

1. Participation and discussion
2. Online and/or scholarly research
3. Written reports
4. In-Class demonstration

5. Computer lab projects
6. Quizzes and tests

Course Content Outline:

1. Animation in Unity
2. Unity Asset Components
 - a. AudioClip
 - b. Cubemap
 - c. Flare
 - d. Font
 - e. Other Components
3. Audio Components
 - a. AudioListener
 - b. AudioSource
4. Physics components
 - a. Rigidbody
 - b. Constant Force
 - c. Colliders
 - d. Joints
5. GameObject
6. Image Effects Scripting
 - a. Flares
 - b. Curves
 - c. Other Effects
7. Particle components
 - a. Particle Emitters
 - b. Particle Animators
 - c. Particle Colliders
8. GUI scripting
 - a. Basics of GUI Scripting
 - b. Controls
 - c. Customization
9. Layer-Based Collision Detection
10. Tags
11. Rigidbody Sleeping

Resources

Goldstone, Will. *Unity Game Development Essentials*. 1. Birmingham:Packt, 2009.

Wittayabundit, Jate. *Unity 3 Game Development Hotshot*. 1. Birmingham:Packt, 2011.

Blackman, Sue. *Beginning 3D Game Development with Unity: All-in-one, multi-platform game development*. 1. New York:Apress, 2011.

Menard, Michelle. *Game Development with Unity*. 1. Boston:Course Technology, 2012.

Resources Other

1. Unity Technologies: Unity Reference Manual - <http://unity3d.com/support/documentation/>
2. Unity Downloads (Free and Licensed) - <http://unity3d.com/unity/download/>
3. Unity Assets - <http://unity3d.com/asset-store/>
4. Unity 3D Student - "Bitesize" Tutorials - <http://www.unity3dstudent.com/>
5. Learn Unity - Up-To-Date Articles and Tutorials on Unity - <http://learnunity3d.com/>