Boise State University

2D/3D Game Development

CS 497 • Summer I 2019

Course description

A project-intensive course on developing games in 2D and 3D using Unreal Engine and others. The entire game dev pipeline will be covered in addition to creating 2D and 3D characters and other assets that import seamlessly into the engine, as well as level and environmental design, artificial intelligence, state machines and more. Heavy emphasis will be placed on the 3D modeling pipeline such as geometry, lighting, basic animation, textures and materials. Learn everything you'll need to create a 1st or 3rd person dungeon crawler RPG and more.

Course objectives

Students will be able to create game and texture game assets, put those into their game, develop the logic for their game and export their game to various platforms including mobile devices.

Pre Requirements

CS 321

Materials Needed

Mac or PC
Recommended specs:

- Windows 7 64-bit or Mac OS X 10.9.2 or later
- Quad-core Intel or AMD processor, 2.5 GHz or faster
- NVIDIA GeForce 470 GTX or AMD Radeon 6870 HD series card or higher
- 8 GB RAM

Grading Scale

97-100 A+	77-79 C+
94-96 A	74-76 C
90-93 A-	70-73 C-
87-89 B+	<70 R
84-86 B	
80-83 B-	

Software

Blender: http://www.blender.org
Godot: https://godotengine.org
Unreal Engine: https://www.unrealengine.com

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Mon, Tues, Wed 12:15 PM - 2:05 Tue & Thur

Week 1

May 13 – 15

- Intro to the course
- Intro to 2D and 3D graphics
- 3D Modeling
- Intro to 2D gaming
- HW: Models

Week 2

May 20 – 22

- Game engines overview and concepts
- Godot and Unreal Engine
- Blueprints and C++ game logic
- Colliders and Triggers
- Timelines & Animations
- HW: 2D Game, GDD, Models

Week 3

May 27 – 29

- Design patterns
- Game Architecture
- HW: 3D game

Week 4

June 3 – 5

- Storytelling in games
- Level design and maps
- Health and player stats
- Characters and animations
- HW: 3D game
- **Midterm**

Week 5

June 10 – 12

- Game architecture
- Game Mechanics

Week 6

June 17 – 19

- Artificial intelligence
- Game Industry

Week 7

June 24 - 26

- Publishing your game
- Making money with your game
- Game marketing
- **Final**

Grading

Homework and assignments at the end of each week based on what we discussed for that week.

5 - Applied techniques, skills or tools that were acquired outside of class

4 - Put in more work, detail or items than was asked

3 - Did the work, checked all the boxes

2 - Did some of the work, missed a few items

1 - Did a little bit of the work, missed most items

0 - No submission or submission didn't function.

Mid term project

Final Project - You'll follow a basic guideline and theme but will create your own game.

Put in the work, get the grade!

This is an art form. You'll be heavily graded on your creativity but technical ability counts for a lot too!