

COSC 4358/6358

Introduction to Interactive Game Development

Fall 2022

Section Number (12782/12781)

Instructor Information

Instructor

Chang Yun

Email

phys1994@gmail.com

Office Location & Hours

In Team meetings | PGH-514 or F-21

TA Information

Sammy Tawakkol

Renee Xu

Email

stawakkol@uh.edu

renee.xu.j@gmail.com

Office Location & Hours

By Appointment

By Appointment

General Information

Room

Class: Science and Research 2 (SR2) 130*

Lab: Fleming COSC Gaming Lab (F) 21*

* Will be offered as an online class using Microsoft Teams if mandated by the University of Houston COVID-19 guideline.

Time

Tuesdays and Thursdays, 4:00-5:30PM

Course Description and Objectives:

This course will introduce you to the world of early-to-mid-stage interactive game development in one of diverse platforms (e.g., PC/Mac, mobile, console, AR/VR, Kinect, etc.). Using Unity Game Engine and Microsoft C# programming (or other engines such as Unreal Engine and C++ programming), you will design a video game from scratch in a team setting (a team of 5-7). You will learn and practice the game development process starting from the pre-production (e.g., planning, designing and game documenting) followed by the production (e.g., programming, integration, and testing) process.

Throughout the semester, you will produce a prototype or early-alpha-stage team game in any genre (e.g., platformer, fighting, racing, RPG, strategy, puzzle, etc.), or dimension (2D, 2.5D or 3D) or storyline as long as its ESRB rating does not exceed 'T' for Teen.

Weekly Schedule

- Class 1 (8/23/2022) – FIRST DAY OF CLASS
 - Course Introduction
- Class 2 (8/25/2022)
 - Schedule and Syllabus
 - **Start Team Forming**
 - **Assignment 1 (individual): Unity 2D/3D Game Tutorial**
 - **Assignment 2 (team): An idea for the team game**
- Class 3 (8/30/2022)
 - Lecture: [PRODUCTION] Position and Roles in a Team
- Class 4 (9/1/2022)
 - Lecture: [DESIGN] Creating the Process
 - **Assignment 3 (team): Game Design Document**
 - **Assignment 4 (team): Game Storyboard**
- Class 5 (9/6/2022)
 - Lecture: [PRODUCTION] Production Overview
 - **Assignment 5 (team): Production Checklist**
- Class 6 (9/8/2022)
 - Lecture: [DESIGN] Creating the Core
 - **Finalize Team Forming**
 - **DUE: Assignments 1 and 2**
- Class 7 (9/13/2022)
 - Demo: Past COSC4358/6358 Game Showcase
- Class 8 (9/15/2022)
 - Lecture: AR/VR – Introduction and Demo (Jared Bienz – Microsoft)
- Class 9 (9/20/2022):
 - Team Introduction and Game Development Plan Presentation 1
- Class 10 (9/22/2022):
 - Team Introduction and Game Development Plan Presentation 2
 - **Assignment 6 (team): Team and Game Summary**
 - **DUE: Assignments 3-5**
 - **Finalize Team Meeting Date**
- Class 11 (9/27/2022)
 - Hands-on Training: Unity 1
- Class 12 (9/29/2022)
 - Lecture: [GUEST] User Interface Design in Practice
 - **DUE: Assignments 6**
- Class 13 (10/4/2022)
 - Pre-Duel Challenge
- Class 14 (10/6/2022)
 - Team Project
 - Duel Challenge Announcement for Rank D Duel on Class 15
- Class 15 (10/11/2022)
 - Rank D Duel – Day 1
 - Duel Challenge Announcement for Rank D Duel on Class 16
- Class 16 (10/13/2022)
 - Rank D Duel – Day 2
 - Duel Challenge Announcement for Rank D Duel on Class 17
- Class 17 (10/18/2022)
 - Rank D Duel – Day 3
 - Duel Challenge Announcement for Rank D Duel on Class 18
- Class 18 (10/20/2022)
 - Rank D Duel – Day 4

- Last Rank D Duel Day
 - **Assignment 7 (team): Game Promo Video (minimum 1 minute)**
- Class 19 (10/25/2022)
 - Team Project
- Class 20 (10/27/2022)
 - Team Project
- Class 21 (11/1/2022)
 - Pre-Duel Challenge
- Class 22 (11/3/2022)
 - Team Project
 - Duel Challenge Announcement for Rank D Duel on Class 23
- Class 23 (11/8/2022)
 - Rank C Duel – Day 1
 - Duel Challenge Announcement for Rank C Duel on Class 24
- Class 24 (11/10/2022)
 - Rank C Duel – Day 2
 - Duel Challenge Announcement for Rank C Duel on Class 25
- Class 25 (11/15/2022)
 - Rank C Duel – Day 3
 - Duel Challenge Announcement for Rank C Duel on Class 26
- Class 26 (11/17/2022)
 - Rank C Duel – Day 4
 - Last Rank C Duel Day
- Class 27 (11/23/2022)
 - Team Project
- **THANKSGIVING HOLIDAY** (11/23/2022-11/26/2022)
- Class 28 (11/29/2022)
 - Team Project
 - **DUE: Assignments 7**
- Class 29 (12/1/2022) – LAST DAY OF CLASS
 - Final Game Presentation and Demo

Prerequisites

1. COSC 3320: Algorithms and Complexities
2. [COSC 4370: Interactive Computer Graphics] >> **Prerequisite for COSC4359!!!**

Mandatory Weekly Meetings

Starting on the week of September 20, each team is required to meet with me in regularly scheduled meetings and report following progress report:

1. Report the progress of overall projects
 - a. Core Engine Design
 - b. Features and Assets Production
 - c. Level Design
 - d. Game Play
 - e. Entertainment and Immersive Factors
2. Team Report
 - a. Individual Progression – Workload and fulfillment of individual roles/responsibilities (will be determine each member's final individual grade)

- b. Overall Milestones and Deadlines
 - c. Other Team-related Issues
- 3. Future-Plan Report
 - a. Development plans for the next two weeks
 - b. Adjustments of Must-to-do, Want-to-do, and Would-like-to-do lists

We will discuss about the project and make necessary changes to further improve the quality of each asset/feature, speed of progression, and adjustment of overall game design (if necessary).

Grading Criteria (both COSC4358 and COSC6358)

7 Assignments – 35%*

1 Final Game Presentation and Demo – 65%**

2 Team Duels (Rank D and Rank C)

Earn Coins (Extra)

* Except for the assignment 1, all the assignments will be team-based (team of 4-7 students) projects. Unless specified by the instructors, they are due in one week (each assignment must be submitted prior to the beginning of next class). Failure to submit an assignment before the deadline would reduce the assignment grade by 50%. No exceptions. You will submit your assignments to TA.

** The final will be held on the last day of class – Thursday, December 2 – in PGH-232. Game developers (e.g., programmers, artists, designers, producers, sound technicians, etc.) from the local video game industry and former Game Development students (CS alumni) will attend the final as judges and assess the games. Each team is required to make a brief introductory presentation about its game at the beginning of the class. Afterward, I expect members of each team to sit together and wait for the judges to playtest the game. The judges will playtest for 10 minutes per each game and provide their assessments as well as recommendations to further improve it. At the end of the playtest session, the judges will meet and finalize the grade for each team's game. The individual grade will be given based on the team game grade as a baseline and individual contributions in developing the game throughout the semester. **EXPECT THE FINAL DAY TO LAST UNTIL 10PM. PIZZA AND BEVERAGES WILL BE PROVIDED.**

Final Grade will be determined by the sum of the above criteria

- Last day to drop a course without receiving a grade is Wednesday, September 7, 2022
- Last day to drop a course or withdraw with a 'W' is Tuesday, November 16, 2022
- If you stop coming to class and do not drop, and your name appears on the final class roll, you will receive a grade of F at the end of the semester

Late Registration

No special accommodations will be made for students who register late for this class, miss class, or are denied access to Blackboard owing to late registration. It is the sole responsibility of the student to seek out and obtain course materials or announcements if they miss class or cannot access these items through Blackboard. If you do encounter problems accessing the course material, please contact the instructors immediately for help, in person and via email. We are best able to help you the sooner you let us know.

Recommended Textbook

1. [Unity Reference Book] "Hands-On Unity 2020 Game Development: Build, customize, and optimize professional games using Unity 2020 and C# " by Nicolas Alejandro Borromeo, Packt Publishing, 1st Ed., 2020.
2. [Other Reference Book 1] "Game Development Essentials: Gameplay Mechanics" by Troy Dunniway and Jeannie Novak, Thomson Delmar Learning, 1st Ed., 2008.
3. [Other Reference Book 2] "Fundamentals of Game Development", by Heather Maxwell Chandler and Rafael Chandler, Jones & Bartlett Learning, 1st Ed., 2011.
4. [Other Reference Book 3] "Game Development Essentials", by Jeannie Novak, Thomson Delmar Learning, 1st Ed., 2004.
5. [Other Reference Book 4] "The Art of Game Design: A Book of Lenses", by Jesse Schell, CRC Press, 2nd Ed., 2015.
6. [Online Unity Reference] <http://www.unity3d.com/learn/>
7. [Online Autodesk Software Reference] <http://www.autodesk.com/education/>

Addendum

Students with disabilities need to register with CSD and present any accommodation requests by the first week of class. Whenever possible, and in accordance with 504/ADA guidelines, the University of Houston will attempt to provide reasonable academic accommodations to students who request and require them. Please call 713-743-5400 for more information. Do not hesitate to meet with me to discuss such concerns/needs.

Counseling and Psychological Services (CAPS) can help students who are having difficulties managing stress, adjusting college, or feeling sad or helpless. You can reach CAPS (www.uh.edu/caps) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone who know is in crisis. No appointment is necessary for the "Lets talk" program, a drop-in consultation service at convenient locations and hours around campus. <http://www.uh.edu/caps/outreach/lets-talk.html>.

[Hyflex or In-person Class Only]

Class begins at 4:00PM and you are expected to be here on time. If, for unforeseen reasons, you arrive late, take a seat near the door where you enter. Once the class is underway, **do not cross the room in front of the class as this is disruptive**. Noises from cell phones, beepers, and other such devices are disruptive to the class and such equipment **must** be turned off before entering the class.

We have learned in recent semesters that email is no longer a reliable way to contact the students as they often just do not check their accounts. We will ask each student the best mean to communicate on the second class day (8/25/2022).