CS198-68: Game Design and Development

Course Info
Time: TBD
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Course Description
This course is a deep dive into the creation of games, from beginning to end. Over the course of the semester, students will pitch a game, form small teams, and build out a project from start to finish with help from the instructors. Students are not required to have any prior game development experience but it is strongly recommended that a student taking the course either has basic art abilities or basic programming abilities. They will also learn about the different roles that exist within the industry, how to apply their skills to them, and form an understanding about how to best prepare themselves to find their way into these roles. This will be a rigorous class, one that will require a lot of time and dedication. Students will be selected via application prior to the first week of classes, to ensure that the class’s composition reflects a diverse range of skills, backgrounds, and proficiency levels.

Prerequisites
This class is open to both programmers and artists. You are not required to have any prior game development experience.
Programmers
● Have completed cs61a and cs61b (concurrently is ok)
Artists
● Some artistic background, familiarity with some digital art tools

Course Structure
● The class meets twice a week, for an hour and a half each meeting and attendance matters.
● For the first 4 weeks, both meetings will be tutorial lectures, designed to give students knowledge of how the Unity engine works, best practices for implementing game mechanics, and an introduction to graphics in Unity3D.
After project teams are formed around Week 5, the course will assume this structure:
● the first meeting of the week will be a project work meeting, and the second a lecture.
● During the project work meetings:
  ○ Teams will meet and log their work in a development blog and plan their work schedule for the next week.
  ○ Teams will work on their projects and get help from facilitators.
● The lectures from Week 5 onward will be determined during the semester based on what the students need. The lectures will come from a variety of sources: instructors, industry contacts, alumni, and possibly the students themselves.

The Projects

Project 1: A game based on official Unity tutorials, built by the instructors. Students will be given skeleton code and required to implement basic functionality, such as player input, controllers for the player and enemies, and a UI. This project will build upon key concepts introduced in the tutorial lectures given in the first 4 weeks of the class.
   Team size: 1-2 people

Project 2: A one week “game jam” type project where the goal is to try and build a game in a week. The main purpose of this project is to teach students about scope and what can be done in a week. It will also serve as a good opportunity to see what kind of a group dynamic works best for you.
   Team size: 2-3 people

Project 3: The flagship project for the course is a game designed and built by the students themselves. Students will begin preparing their pitches in Week 5 with guidance from the instructors, and will give their pitches to the entire class in Week 6. Not all students must give a pitch, a majority of pitches will come from the mentors. Students will then select which projects they are interested in, and the instructors will match people to teams based on their interests and skills. Each team will have one mentor who is a student who took the course in a past semester. The mentor will be the team lead and will hold group members accountable by delivering grades to the facilitators. From there on out, the teams will work with the instructors and their team leads to create a schedule and stick to it. All projects will be graded based on how well they achieve 5 milestones, placed 2 weeks apart. These milestones are as follows:

  ● Milestone 0: Game design document explaining the vision for the game, as well as a week by week breakdown of tasks.
● **Milestone 1**: Playable prototype of the original pitch. The core mechanics of your game should be implemented, though no art needs to be in place yet. Effectively this milestone exists to ensure that your game will be fun, and to get feedback on how it can be improved if it’s not shaping up to be fun.

● **Milestone 2**: Alpha Build. All mechanics should be in place/in a testable state. Your general art style should be decided on and you should have a few assets in place. You should have a basic level. Can be very buggy.

● **Milestone 3**: Beta Build. All levels should be built, and all mechanics should be implemented. A first pass should have been done on all art assets, and they should be in the game. There may be bugs and glitches, but the game should be starting to look like the final product at this point.

● **Milestone 4**: Finished Project. The game should be complete, and in line with the original pitch. It should be playable from start to finish, and mostly bug free.

At each milestone, team members will fill out team evaluations that will be factored into your grade.

**Written Responses**

Students will be responsible for several written assignments. One is a weekly development blog that documents the progress your group is making on your game. One is a game design document that details the design of your game as well as a week by week breakdown of tasks. Lastly students will be required to submit a short writeup detailing their thoughts on their project and the course as a whole.

**Required Materials**

Every student will need a laptop capable of running Photoshop, Illustrator, Unity3D, or another game engine. No textbooks are required. Two recommended resources are articles from [www.gamasutra.com](http://www.gamasutra.com) and videos from [www.gdcvault.com](http://www.gdcvault.com).

**Grading**

Overall:

- Project 1: 15%
- Project 2: 15%
- Project 3: 60%
- Written Responses: 10%

Project 1 and 2:

- Graded on completion of project specifications
- Grading will consist of a p/np and some feedback on your project
Project 3 (Per milestone):
  ● Mentor evaluation: 40%
  ● Peer evaluations: 40%
  ● Project score: 20%
    ○ Project score is based off of progress made not percentage of pitch completed

A minimum of 70% is required to pass the course.

General Policy

Attendance matters! If you cannot be at class, you must let an instructor and your team lead know. Only two unexcused absences will be allowed, and any further absences will result in your grade dropping 10% per absence. If you are in danger of not passing come the end of the semester, the instructors will let people know what can be done to remedy that.

The instructors recommend you use Unity3D for your projects, as that will be the only “supported” engine by the instructors. You are welcome to use other engines, but the instructors will likely be unable to help you as well as a result.

Schedule

Guest lecture dates are subject to change based on availability of the guests, and the lecture schedule itself may end up in a very different order than written here, but the topics will remain largely the same.

8/24: No class
8/29: Course Overview and Info Session, Past semester game showcase
8/31: Lecture: Intro to Unity- Basics
9/5: Lecture: Intro to Unity- Programming
9/7: Lecture: Intro to Unity- The art pipeline
9/12: Lecture: Intro to Unity- Approaching a project (Project 1: Tutorial due)
9/14: Lecture: Basics of Game design
9/19: Lecture: How to work as a team/ Mentor advice + pitch day explanation
9/21: Lecture: Showcase game jams (Project 2: Game jam due) + Group dynamics, Unity and git, extra topics
9/26: Pitch day + Explanation of project 3 and mentor system
9/28: Teams are assembled + Brainstorming session
10/3: Project work meeting
10/5: Lecture: TBA (based on class needs) (Game Design Doc due)
10/10: Project work meeting
10/12: Lecture: TBA (based on class needs)
10/17: Project work meeting
10/19: **Milestone 1 Delivery: Demo and Feedback**
10/24: Project work meeting
10/26: Lecture: TBA (based on class needs)
10/31: Project work meeting
11/2: **Milestone 2 Delivery: Demo and Feedback**
11/7: Project work meeting
11/9: Lecture: Guest lecture (TBA)
11/14: Project work meeting
11/16: **Milestone 3 Delivery: Demo and Feedback**
11/21: Project work meeting
11/23: **Thanksgiving (No class)**
11/28: Lecture: Guest Lecture (TBA)
11/30: **Milestone 4 Delivery: Demo and Feedback** + (Game/course postmortem writeup due)