Introduction to Game Development – Fall 2016 Syllabus

Instructor

Margaret Moser

Student Assistants

TBA

Class Meetings

Mondays and Wednesdays 10-11:50am, SCA room 356. Beware, this room is hard to find.

Course Description

In this core course for the Interactive Media and Games Division, students will learn the art of creating digital game prototypes. The class is taught in the Unity game development environment using C# scripting.

This combination of tools gets students making games quickly while also teaching the fundamentals of game programming. Unity is a professional tool in widespread use, including on award-winning, high-profile games such as Monument Valley, The Room 1-3, Threes!, Assassin's Creed Identity, and many more. It can be used to create games for many platforms (Mac, PC, web, iOS, Android, etc.)

We will also introduce basics of Agile, the industry-standard production methodology, and the use of version control systems in developing code.

By the end of this course, you will have the skills to create digital prototypes of your own ideas. Whether you are encountering code for the first time or come in with some experience, you will come out a better designer, equipped to explore and test your ideas without needing help.

Course Rationale

All designers need the ability to communicate their ideas to others. Because games are interactive, a functioning prototype communicates the designer's ideas more clearly than any static description can. A game designer's ability to prototype is thus equivalent to a cinematographer's ability to sketch – while the skill does not directly appear in the final product, it allows the designer to refine his or her ideas and communicate them in a direct way to both team members and test audiences.

In addition, the rules, patterns, and behaviors that form the game experience are a direct reflection of the underlying code. Code is the raw material with which interactive experiences are built, as pottery is made of clay and paintings are made of paint. The designer who understands code therefore has a much deeper understanding of games as a medium.

Course Pre-requisites

None, though either CTIN 101 or CSCI 101 is recommended. If you are working with code for the first time, you should expect to commit extra time to classwork each week and to attend office hours regularly.

Course Communications

We will use a variety of technical tools to communicate. The central source of information will be the Slack channel, ctin483.slack.com.

Most assignments and materials will be made available through the Perforce version control system, which will be explained in class. Most communications, including announcements, will go through our class Slack channel. This is also the best place to ask questions.

You may contact me at **mmoser@cinema.usc.edu** regarding absences, grades and other administrative issues. You must use your @usc email address. Please allow at least 24 hours for a response.

Office Hours

Professor Moser	**SAs**
Monday 3:30pm-5:30pm, or by appointment	TBA; will be provided in a Google calendar

During these times we are available for drop-in support in the department offices in SCI 201, near the arcade machine on the second floor. You can also reserve a 15-minute slot within these hours, or request appointments at other times, through Slack.

Materials

Generally, technical books go out of date very quickly, and it is difficult to justify the investment. However, each of these resources covers not just the details of how to use the tools but important concepts and techniques in programming and game development.

These are the required materials:

> *Introduction to Game Design, Prototyping, and Development* – Jeremy Gibson
>
> *Learn To Code by Making Games* – Ben Tristem & Brice Fernandes, on udemy.com
> Note that Udemy regularly offers deep discounts – up to 30% – to those who wishlist a course.

We will use Unity 5.4.3 for this semester's class. You can download the free version of Unity from http://unity3d.com/download. I will recommend (but not require) a few packages from Unity's Asset Store; these will be discussed in class.

Evaluation of student performance

Homework	35%
Classic Game Project	20%
Final Game Project	30%
Participation	15%
Total:	100%

You are responsible for understanding assignments.

In this class, good work and satisfying all of the requirements of the assignments will earn a student a B. To receive an A, a student must go beyond the basic requirements of the assignment and bring something creative to the work.

While visual art can contribute to this transition from B to A, graphical ability is not otherwise graded in this class. CTIN 483 is about learning to make interactive prototypes, and students will not earn credit for art unless all of the programming requirements for the assignment or project are already met. This applies to the pair projects as well; each student must contribute equal effort to the coding.

All homework and projects must be turned in by 11pm the night before class. You will receive half credit if you turn it in within 24 hours of the deadline, and no credit thereafter. If you have trouble getting your work into the repository, you must ask for assistance by **8pm** the night the assignment is due. If you have done so then I may (at my discretion) allow you to turn in your work after class. This is the only exception.

During the tutorial phase of the class, homework will be assigned in almost every class. These assignments will be pass/fail based on whether the student followed instructions and demonstrated an effort to complete the assignment. I will drop your lowest homework grade at the end of the semester.

Most assignments will require you to make things in Unity. When you make something in Unity, you must turn in either an **exported scene** or a **build**. We will go over in class what these are, how to make them, and how to turn them in. If your project doesn't do everything it's supposed to, but shows effort, you will still receive credit. If it doesn't run at all, you will not receive credit.

Participation consists of participating in class discussions and exercises and coming to office hours, in whatever combination you like. Participation is also affected by attendance (see below for attendance policy).

Course Outline

Week 1 – Week 7: Introduction to Unity and C#

Structure: During this part of the semester, students will be instructed in various aspects of game prototyping using C# and Unity. We will go over general syntax and code structures in C#, how to use the Unity editor, and how to work with Unity objects through code.

Assignments: Individual assignments each week. All assignments are pass/fail.

Week 8 – Week 11: Classic Game Project

Structure: We will continue with lectures during the first class meeting of each week. In the second class meeting of each week students will present their in-progress builds.

Assignment: Pair assignment due Week 11. Students will work in pairs to create a game prototype that mimics the mechanics and "game feel" of a classic game from the 8-bit era.

Due Wednesday, November 2

Week 12 – Week 15: Final Game Project

Structure: We will continue with lectures during the first class meeting of each week. In the second class meeting of each week students will present their in-progress builds.

Assignment: Pair assignment due during the final exam period. Students will create a new, unique game prototype. This project should both showcase the skills that they've learned throughout the semester and express a unique game design vision.

Beta due Wednesday, November 30

Final Exam

Students will add polish to their final games and submit them to the class repository.

Due at 11:59pm on Tuesday, December 6

Absence Policy

Students are expected to attend every class. This is for your own sake – we will move quickly, and it is easy to fall behind. The following guidelines, from the Interactive Media Division handbook, apply to all students:

- Two unexcused absences: lowers course grade one half grade point, e.g. from A- to B+
- Three unexcused absences: lowers course grade one full grade point, e.g. from B to C

- Four or more unexcused absences: request to withdraw from course (instructor's discretion)

Students arriving more than five minutes late to three classes, more than ten minutes late to a single class, or leaving early, will be marked as having an unexcused absence from class, unless prior permission has been obtained from the instructors.

Additionally:

- If you are absent without excuse on a day when your team is presenting your classic or original game project, you will receive a zero for that turn-in.

- I may ask you to withdraw if your total absences become excessive, even if they are excused.

The only excused absences are for illness, family emergencies, and (with advance notice) commitments related to a scholarship you are receiving, e.g. for a varsity sport. You must contact me as soon as possible regarding your absence. Generally I will expect to hear from you before class; in exigent circumstances I would expect to hear from you within 24 hours. If I do not hear from you in a timely fashion you may forfeit your option to make up what you have missed.

All that said:

1. **If you are sick, stay home.** You need to be healthy to learn, and so do your classmates (and instructors).

2. I do not distinguish between mental health and physical health. If you cannot complete an assignment on time or come to class because of mental health issues, you must contact me promptly, just as with physical health problems.

Incompletes

The only acceptable reasons for taking an incomplete in the course are personal illness or a documented family emergency. Students who wish to take incompletes must present documentation of the problem to the instructor before final grades are due. Incompletes are not available before the Week 12 withdrawal deadline.

Conduct

In this class, we make a commitment to foster a welcoming and supportive environment where students of all identities and backgrounds can flourish. This means that we will issue content warnings as appropriate, use preferred pronouns, and respect self-identifications. While debate and discussion are welcome, please remain aware of the implications of your words and the images that you include in your work. If the instructor or another student

points out that something you have said or shared with the group might be offensive, avoid being defensive; this is a valuable opportunity for us to grow and learn together.

If you have a concern about any aspect of the class, you are encouraged to speak with the instructor. If you feel uncomfortable speaking with the instructor, you are also welcome to speak with either the undergraduate or graduate advisor for the division, who can discuss the issue with you directly or point you toward other on- and off-campus resources for addressing your concern.

Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. Such behavior inhibits other students' ability to learn and an instructor's ability to teach. A student responsible for disruptive behavior may be required to leave class pending discussion and resolution of the problem and may be reported to the Office of Student Judicial Affairs for disciplinary action.

Academic Integrity

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. Scampus, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: http://www.usc.edu/dept/publications/SCAMPUS/gov/. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at http://www.usc.edu/student-affairs/SJACS/.

For this class, you are encouraged to copy and modify code from online sources and from class demonstration projects. You are also welcome to work together on individual assignments. However, you must always label and provide attribution for work that is not your own, using a credits screen in your game or a credits.txt file delivered with your build.

You must provide attribution:

- if you use more than 3 lines of code from an external source without substantially modifying it
- if you use any assets (images, textures, sounds, etc.) that are not your own work

You may use any code presented in class without attribution.

If you are not sure whether you need to document something, document it. If you are uncertain about what constitutes plagiarism, it is your responsibility to ask the instructor for clarification.

Support

A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the American Language Institute (ali.usc.edu), which sponsors courses and workshops specifically for international students.

The university provides extensive support for students facing everything from normal exam stress to insomnia to personal crises. Among the many services:

- The Wellness Lounge in room 203 of the Engemann Student Health Center offers not only drop-in consultation but fresh fruit, chocolate and massage chairs.
- The Office of Wellness Health and Promotion (owhp@usc.edu or 213-740-4777) runs Happy Hours featuring yoga, visiting therapy dogs, and more.
- Student Counseling Services (213-740-7711, 24 hours, or walk-in on the third floor of Engemann) offers an enormous array of resources, from one-time crisis support to weekly Stress Fitness workshops, for students facing all types of challenges.

Emergencies

If an officially declared emergency makes travel to campus infeasible, USC Emergency Information (emergency.usc.edu) will provide updates on safety and other issues, including ways in which instruction will be continued.

Syllabus Updates

This syllabus is liable to change up to the beginning of class and possibly over the semester. Please check the posted syllabus regularly, and note all changes that are shared by the instructor in class. You are responsible for keeping up with changes, even if you are absent from a class.

Academic Accommodations

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. You can contact DSP by email at ability@usc.edu, by phone at 213-740-0776, or by video phone at 213-814-4618.