Game Studio I
GAMES-GT 120
Fall 2017

Course Syllabus

Professors: Bennett Foddy foddy@nyu.edu
               Tuesdays and Thursdays 9:30am-1215pm, Room 830
               Tuesdays and Thursdays 2pm-4:45pm, Room 830

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Course Description
Game Studio I is the Game design MFA program's introductory game development course. Students will gain experience with two game engines which have complementary strengths and capabilities, working alone and in teams on a series of three game development projects. The focus of this course is on developing a broad set of practical skills that will prepare students for developing games alone or in groups.

Course Objectives
At the completion of this course, the student will be able to:
1. Demonstrate competence producing polished and complete small-scale games using two game engines.
2. Demonstrate an ability to make a game from beginning to end both by themselves and in small groups.
3. Analyze and articulate strengths and weaknesses in the student's and classmates' work.
4. Understand and explain the affordances of the game engines provided in the course, and make knowledgeable decisions about which engine to use for future projects based on this understanding.
5. Gain insight into the technical and creative dimensions of each aspect of digital game production: art, sound, programming, and design.
6. Develop a personal creative process, allowing the student to translate ideas into the form of a digital game.
7. Understand how the scope of a digital game should be constrained in order to make development possible within time and resource limits.

Course Format

The course meets twice per week. The lecture meeting will be used for discussion and critique, in-class exercises, and talks from visiting game developers. The labs will be focused on group work time, and will include instruction in the development platforms for this course. Students should expect to put in at least 10 hours per week outside of these two class meetings.

Assignments And Readings
The semester's work is divided into three phases. In the first phase, students complete a warmup exercise and then develop a game in p5.play, a simple HTML5 game engine. In the second phase, the students work on a second warmup exercise and then a game in Unity, a widely-used cross-platform game engine. In the final phase of the semester, students will work in pairs to improve another student's earlier project.

Assignments are submitted and presented in lecture meetings, for discussion and critique by the class. Due dates are as follows:

Lecture class, week 3 (9/19): HTML5 warmup due.
Lecture class, week 6 (10/10): HTML5 game due.
Lecture class, week 8 (10/24): Unity warmup due.
Lecture class, week 11 (11/14): Unity game due.
Lab class, week 14 (12/7): Final game due.

Game Studio is predominantly a practical class, so there is no primary text, although some readings may be assigned in digital format.

Grading
In Game Studio I, the emphasis is on building a broad understanding of a variety of skills. Grades for the projects will therefore depend heavily on students' improvement in areas of weakness. Strong coders will not be rewarded for making good games that have simple visuals or rudimentary sound design, and strong artists will not be rewarded for avoiding programming. You are strongly encouraged to get out of your comfort zone. Challenge yourself!

Final grade for the class will be calculated as follows.

Participation in discussion and critique 20%
HTML5 warmup: 10% (this requirement is pass/fail)
HTML5 game: 20%
Unity warmup: 10% (this requirement is pass/fail)
Unity game: 20%
Final mystery game: 20%

Statement Of Academic Integrity:
Plagiarism is presenting someone else's work as though it were your own. More specifically, plagiarism is to present as your own: A sequence of words quoted without quotation marks from

another writer or a paraphrased passage from another writer's work or facts, ideas or images composed by someone else.

Importantly however, Game Studio I is not a course in programming, so students will have read access to the code and project files of their peers. Students are expected to produce unique gameplay, art and sound, but may borrow code liberally from their classmates.

Accessibility:
Academic accommodations are available for students with documented disabilities. Please contact the Moses Center for Students with Disabilities at 212 998-4980 for further information.

Attendance:
Attending and arriving on time to all class sessions is required and expected. This includes all labs, recitations, and critiques. If you will be missing a class due to illness, or unavoidable personal circumstances, you must notify your professor in advance via email for the absence to be excused.

Schedule
(Note: this is subject to change — the class will be adjusted according to the needs of the students)

Week	Date	Topic
1	9/5	Intro to p5.play and HTML5
2	9/12	Sprites and animation
3	9/19	Game Feel
4	9/26	Sound Design
5	10/3	Tuning
6	10/10	Intro to Unity
7	10/17	2D Visual workflow in Unity
8	10/24	3D workflow in Unity
9	10/31	Unity's Animation System
10	11/7	Physics Engine
11	11/14	UI Design in Illustrator
12	11/21	Adding Juice (no lab this week)

| 13 | 11/28 | Optimization and Profiling |
| 14 | 12/7 | Final presentations (during the lab class) |

Week 1 – Diving In
Introductions.
Overview of game development process.
Analysis of p5.play and Unity 3D engine properties. (compare other engines)
Review past student projects.
Analysis of the differences between working alone and in groups
Tutorial: Sublime Text / p5.play / Webserver, assignment setup

Reading: How to Prototype a Game in Under 7 Days.
http://www.gamasutra.com/view/feature/130848/how_to_prototype_a_game_in
_under_7_.php?print=1

Homework: Bring prior examples of your work to the next class for discussion.

Begin working to modify the p5.play example game.
Training during lab session in p5.play.

Week 2 – HTML5 Warmup Continued
Showing prior work
Discussion/critique of initial steps in exercise.

Tutorial: Spriting and animation workflow in Photoshop

Homework: Iterate on and refine warmup project based on in-class feedback.
Continued training during lab session in p5.play.
Bring examples of browser games you like to class.

Week 3 – Begin Work on HTML5 Game Project
Present warmup exercise for feedback.

Idea generation exercise and present-out for feedback.
Scoping-down exercise – discussion of example games.

In-class exercise: Game Feel: fix the broken p5.play game

Reading: Michael Brough, How To Do A Game Jam.
http://mightyvision.blogspot.co.uk/2013/04/how-to-do-game-jam.html

Homework: Start work on p5.play game project.
Install Adobe Audition on your computer.
Bring an example of a game with Sound Design you like to class.

Week 4 – HTML5 Game Prototype Testing and Discussion
Test and critique of prototypes in class.

Feedback focused on prototyping stage.

Tutorial: Basic sound design and mastering for games in Adobe Audition. Record and apply sounds to a silent HTML5 game. Discuss example games.

Reading for next week: Chris De Leon: Game Programming fundamentals
http://www.hobbygamedev.com/articles/vol5/game-programming-fundamentals/

Homework: Read the reading. Work on your game.

Week 5 – HTML5 Game Alpha Testing and Feedback
Test and critique of alpha versions.
Exercise: Structured playtest of alpha versions
Tutorial: Tuning your game. Adjust a sample game until it is perfectly tuned.

Homework: Finish p5.play game based on class feedback

Install Unity3d and Maya 2014 on your computer.

Week 6 – Begin Unity Warmup Exercise
Present HTML5 games for feedback in class.

Tutorial: Setting up a project in Unity3D. Prototyping your game world using Unity primitives.

Homework: Begin work on the Unity warmup exercise

Week 7 – Further Work on Unity Warmup Exercise
Feedback and discussion of progress on warmup exercises.

Tutorial: Materials and Textures in Unity, 2D sprite workflow

Homework: Complete warmup game for critique session next week. Install Adobe Illustrator on your machine.

Week 8 – Begin Work on Unity Game

Present Unity warmup exercise for feedback

Idea generation exercise and present-out for feedback.

Informed comparison of the game engines revisited

Tutorial: 3D asset workflow.

Homework: Start work on Unity game

Week 9 – Prototype Testing: Unity game
Present Unity game prototypes for feedback.
Discussion: Teaching players the rules of your game, explicitly or implicitly.

Tutorial: The Unity Animation system + Mecanim for 2D and 3D

Homework: Continue work on Unity game project
Continued training during lab session on Unity 3D.

Week 10 – Alpha testing: Unity game
Present Unity game prototypes for discussion and feedback.

Guest lecture and feedback focused on game design and development.

Tutorial: Understanding how to use a modern physics engine.
Exercise: Game Feel part 2. How to avoid floatiness issues with Unity physics. Repair a typical floaty Unity game.

Homework: Finish your Unity game

Week 11 – Begin Final Game
Present Unity game in class for feedback.

Exercise for formation / selection of final projects / developing task list.

Tutorial: UI design with Illustrator and Unity, Using the UI system in Unity.

'Reading': Petri Purho and Martin Jonasson: Juice it or Lose it (video).
http://www.youtube.com/watch?v=Fy0aCDmgnxg

Homework: Start work on improving your selected game for further critique session next week.

Week 12 – Final Game Beta Testing

Playtesting of final games.

Tutorial: Group analysis of juicy games. Add juice to a basic Unity game in an hour.

'Reading': Jonathan Blow: Push and Convey (audio + slides):
http://braid-game.com/news/2008/02/another-lecture-this-time-from-denmark/

Homework: Continue polishing the beta of your game.
Bring an example of a game you like with interesting tutorials or sets of instructions

Week 13 – Final Game Polish Phase
Critique session, further beta testing.

Tutorial: Optimize your game and avoid performance problems. Packaging your game for distribution.

Homework: Complete final polished game for critique session next week.

Week 14 – Final Presentation and Critique of Final Game
Critique session.