INTERMEDIATE GAME DEVELOPMENT (GAMES-UT 121-001) SUMMER 2017
INSTRUCTOR: Robert Yang <ry14@nyu.edu>, office hours by appointment
ASSISTANT: Hosni Auji <ha1249@nyu.edu>
TuTh 12:00 PM -4:30 PM 2 Metrotech (MAGNET) ROOM 825

This course reflects the various skills and disciplines that are brought together in modern game development: game design, programming, asset creation, and critical analysis. Classroom lectures and lab time will all be used to bring these different educational vectors together into a coherent whole; the workshop will be organized around a single, long-term, hands-on, game creation project. At the completion of this course, the student will be able to:

1) Describe typical work practice in game development.
2) Demonstrate competency through actual implementation of code and assets.
3) Work with a game engine, and understand the basics of how to build a game in the engine.

MAIN COURSE TOOLS: *(all software is free / or has free student versions)*
(1) A laptop (2) Unity, free personal edition (3) Autodesk Maya 2017 (free student version)
(4) Substance Painter (free student version) (5) GitKraken (free non-commercial version)

LEARNING GOALS: *(practice design, code, and asset creation, as a unified discipline)*
- Iterative prototyping processes and troubleshooting, isolating bugs and problems.
- Code literacy, input and control structures (if / else / for / while), basic OO code patterns.
- Conceptualizing 3D space / raycasting / basic vector math, movement and collisions.
- Basic 3D polygon modeling and texturing workflows, and basic asset considerations.

ATTENDANCE: you must send us a message **BEFORE** class to be excused
2+ unexcused absences lowers grade by one level (e.g. from an A to a B)
2 tardies = 1 absence 15+ min late = 1 tardy

CLASS WEBSITE: **github.com/radiatoryang/summer2017_intermediate**
To turn-in homework, click "Wiki" in the navigation bar, and follow instructions.

WEEKLY ASSIGNMENTS:
- All interactive assignments must be uploaded as a Unity WebGL + Git repo, and linked on the class wiki in the correct section BEFORE CLASS.
- Weekly “devlog” responses to a prompt on the Github wiki.

MIDTERM PROJECT: INDIVIDUAL
A short autobiographical game, with 1+ obstacle / gate / challenge / activity
- you are BANNED from using the Terrain tool

FINAL PROJECT: GROUP
We will work in groups of 3-4 students to build a small game with a secret theme
- if you have a project idea already, you can’t use it for this class, sorry

SCHEDULE (subject to change)

7/04 01: JULY 4th holiday

7/06 02: introductions, what is game dev, editor interface, exporting, basic C# code
Homework: devlog "The Door Problem" by Liz England; finish code handouts;
build a 3D world with 200 objects, install Maya 2017 and GitKraken

7/11 03: review code handouts, intro to vector math, Maya, and GitKraken
Homework: devlog 10PRINT ch. 10, finish handouts, build a 2.5D treasure hunt game

7/13 04: intro to physics, more Maya modeling techniques
Homework: devlog 10PRINT ch. 25, build a Rube Goldberg machine with custom models

7/18 05: coding with physics and raycasts, BEGIN MIDTERM PROJECT
Homework: devlog game concept, prototype working player input, install Substance Painter

7/20 06: playtest midterms, game managers, 3D painting in Substance Painter
Homework: devlog midterm progress and problems

7/25 07: MIDTERM DUE, intro to procedural generation
Homework: devlog 10PRINT ch. 20, make a Vlambeer-style maze tech demo

7/27 08: FORM GROUPS, BEGIN FINAL PROJECT, using Git source control as a group
Homework: devlog "What Do Prototypes Prototype", make a system prototype for your final

8/01 09: review raycasting, for / while loops and lists, work time
Homework: devlog your todo list / analysis, iterate on final project

8/03 10: playtest finals, game feel (squash and stretch, screen shake), work time
Homework: devlog your todo list / progress, iterate on final project

8/08 11: playtest finals, working with sounds, work time
Homework: devlog your todo list / progress, iterate on final project

8/10 12: playtest finals, last work day
Homework: devlog post-mortem, **FINAL DELIVERABLE DUE ON AUGUST 14**

ASSESSMENT
Students will be graded primarily on demonstrated process and technique. Students will be given grades based on a 100-point scale. Each assignment will be graded on a point scale, and these points will be added up to determine the final grade, according to the following:

98-100 A+ 92-97 A 90-91 A- 88-89 B+ 82-87 B etc.

The following are the components of the grade:

Attendance & participation 25
Homework 25
Midterm 15
Final 35
TOTAL = 100

Attendance & Participation
The attendance and participation portion of your grade is based on the following:

- 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. Unexcused absences and being late to class will lower your final grade. Three unexcused absences lower your final grade by a letter. Each subsequent unexcused absence will lower another letter grade. Two tardies will count as one unexcused absence. Arriving more than 15 minutes late to class will also count as an unexcused absence.
- Participation in group discussions and critiques
- Peer grades and participation in writing group evaluations

Group evaluations
Students will also write an evaluation of each team member at the end of the class. These evaluations will be sent to all group members and to the instructor. They must include:
a) 2 positive observations. Particular skills, behaviors, decisions, or ways which member made positive contribution.
b) 2 areas for improvement. At least two observations that point out how the team member can change their working style, collaborative approach, or other aspects of their behavior to improve project and the team dynamic.

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.

Statement of Principle
The core of the educational experience at the Tisch School of the Arts is the creation of original academic and artistic work by students for the critical review of faculty members. It is therefore of the utmost importance that students at all times provide their instructors with an accurate sense of their current abilities and knowledge in order to receive appropriate constructive criticism and advice. Any attempt to evade that essential, transparent transaction between instructor and student through plagiarism or cheating is educationally self-defeating and a grave violation of Tisch School of the Arts community standards. For all the details on plagiarism, please refer to page 10 of the Tisch School of the Arts, Policies and Procedures Handbook 2013-2014, which can be found online at: http://students.tisch.nyu.edu/page/home.html

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.