Game Development Studio 1 (DM 2153 / CS 3233)

INSTRUCTOR: Robert Yang <ry14@nyu.edu> // office hours by appointment
3 credits. 2 Metrotech, RM #817. Downtown Brooklyn. Tues / Thurs, 12:00 - 1:50 PM

DESCRIPTION
An introduction to the design and theory of games, prototyping techniques, and tools.
1) GAME STUDIES: why are games significant? how do we study player cultures?
2) GAME DESIGN: how do we think of games as theoretical systems made of parts?
3) GAME DEVELOPMENT: how do you prototype and iterate a game design, analog or digital?

In this class, we will be mixing analog with digital, developing with playing, and thinking with doing. It is the opinion of this instructor that everyone should learn how to do everything at some basic level -- games are highly collaborative projects, and locking yourself inside one discipline is the best way to be useless. We will apply this attitude to our study as well: history, critical theory, and philosophy, are just as important as source control procedures and code syntax.

This semester, we will be focusing more on simple game designs in Unity and working with 3D.

YOU WILL NEED:
- **A laptop computer!** NOT a tablet, NOT an iPhone... but a laptop, PC or Mac.
- **Unity3D**, free indie version. ("Pro" is okay too, but not necessary at all)
- **Autodesk Maya** (Autodesk offers free 3 year licenses to students)

WE WILL READ: (I'll provide PDF excerpts, but you can buy these books if you like.)
- **Rules of Play,** by Katie Salen and Eric Zimmerman. *Closest thing to a game design bible.*
- **10PRINT,** by Nick Montfort, Ian Bogost, et al. *The philosophy of code and expression.*
- **Game Feel,** by Steve Swink. *The art and science of game input and perception.*

ASSIGNMENTS:
Readings, to be read over the weekend by Tuesday; again, free PDF excerpts will be provided
Weekly homework, short analog or digital design exercises aimed at practicing a skill.
Midterm project, a study and implementation of Animal Upon Animal, a great tactile game
Final project, a study and implementation of Space War, one of the first video games ever made

MIDTERM PROJECT: short term, individual project. Some requirements...
- If on a private Git repository, you must give me access to browse and clone it, **to grade it.**
- You must provide a WebPlayer build and present it in class.

FINAL PROJECT: long term, collaborative group project. Some requirements...
- You must maintain a group Trello to manage tasks and issues. **I will grade it.**
- If on a private Git repository, you must give me access to browse and clone it, **to grade it.**
- You must support keyboard and/or mouse, at the very least. Gamepads are optional.
- You must release Windows, OSX, and WebPlayer builds, publicly, by Tuesday of Week 15.
- You must build some sort of web presence for your game, and you must make a trailer.

CLASS WEBSITE: github.com/radiatoryang/nyupoly_gamedev1_spring2014/
ATTENDANCE: 2+ unexcused absences will lower your grade. 4+ unexcused absences is failure.

CLASS SCHEDULE: (subject to change)

Week 1: introduction to game design theory, iterative process, and Unity; RPS tag
HW: poetic landscape, read Rules of Play

Week 2: Unity physics, intro to systems design, intro to Maya
HW: finish machine, read Rules of Play

Week 3: considering Animal Upon Animal, analog and digital, building on Maya
HW: finish and implement new AUA pieces, read 10PRINT

Week 4: beginning Unity code / C#, Hello World; modding, porting; four square?
HW: groups, design a Four Square variant; read Rules of Play

Week 5: intro to vector math, raycasts, dissecting the AUA code; four square?
HW: groups, design a new AUA variant (non-digital); read Rooie Rules

Week 6: studying players and rules, house rules and Rooie Rules; code + Maya practice
HW: midterm, implement new AUA variant (digital)

Week 7: giving and taking critique; present midterms
HW: midterm, write post-mortem; read Game Feel

********* SPRING BREAK / GDC ***********

Week 8: on juiciness and """"""game feel"""""""; basic sound design + coroutines
HW: write a feel analysis of an analog game and a digital game; read Game Feel

Week 9: consider Space War, form final groups, GDD workshop, group Git with SourceTree
HW: final, write a 1 page GDD; read example GDD

Week 10: porting Space War, implementing Space War; play Spaceteam
HW: final groups, merge and iterate GDD and do a feasibility study; read Yomi article

Week 11: fun with shaders and particles; painting and implementing effects in Photoshop
HW: final groups, build basic input and feel prototype

Week 12: coding some basic and not terribly accurate gravitational attraction; Maya ships
HW: final groups, iterate systems prototype

Week 13: level design concepts and exercises
HW: final groups, iterate level design prototype

Week 14: project review, workshop
HW: final groups, release game!

Week 15: presentations, pizza, fun with VR
HW: final groups, write and ratify a post-mortem