GAME DEVELOPMENT: VR STUDIO (GAMES-GT 124-001) SPRING 2017

INSTRUCTOR: Robert Yang <ry14@nyu.edu>, office hours by appointment
ASSISTANT: "Andrew" Keng-Kai Chang <kkc336@nyu.edu>

MoWe 3:30-6:10 2 Metrotech (MAGNET) ROOM 825

This course is a critical exploration of "virtual reality" (VR) as a passing fad, dystopian nightmare, and possible new mode of consciousness. How do we reconcile the VR industry's promise of "presence" with existing discourse about immersion and realism in games? Classroom lectures and lab time will focus on prototyping novel experiences for VR and critiquing VR as a media culture, culminating in a self-directed final project about VR. At the completion of this course, the student will be able to:

1) Describe contemporary issues in virtual reality and embodied interfaces.
2) Demonstrate competency in working with VR, through actual working prototypes.
3) Work with a game engine, and understand the basics of how to build a game for VR.

PREREQUISITES: prior studio course using Unity, and/or substantial Unity experience

MAIN COURSE TOOLS: *(all software is free / or has free student versions)*
(1) A laptop. (2) Unity, free version. (3) Autodesk Maya 2017. (4) USB thumb drive

READINGS / RECOMMENDED BOOKS:

- Narrative as Virtual Reality, Marie-Laure Ryan
- Hamlet on the Holodeck, Janet Murray

LEARNING GOALS: *(practice design, code, and asset creation, as a unified discipline)*

- Iterative prototyping processes and troubleshooting, isolating bugs and problems.
- 3D asset creation and contemporary real-time 3D game art workflows
- Understanding VR critically as a history / culture / technological medium

ATTENDANCE: **message me BEFORE class to be excused…**
3+ unexcused absences lowers grade; 2 tardies = 1 absence; 5+ minutes late = 1 tardy

CLASS WEBSITE: **https://github.com/radiatoryang/spring2017_vrstudio**

WEEKLY ASSIGNMENTS: Weekly prototyping exercises, weekly discussions of readings

MIDTERM PROJECT: A video of a "proof of concept" prototype for your final project

FINAL PROJECT:

OPTION A: a senior capstone project or MFA thesis that heavily uses VR
OPTION B: in groups of 2-4, make a substantial VR prototype game / experience
OPTION C: individually, film (or write) a long-form piece of VR criticism / theory / speculative design… good if you don't have the time or desire to make a big VR game

WEEKLY SCHEDULE (subject to change)

W1, 1/23: intro to VR, how to use the VR hardware, Allegory of the Cave, Unity review
LAB / HW: watch Star Trek: TNG 1x15 "11001001", play required VR games, build "cave allegory"

W2, 1/30: how to do Unity for Vive VR stuff, VR usability theory
LAB / HW: read "A Brief History of Virtual Reality", build a simple VR proto to evoke VR history

W3, 2/6: vector math and raycasting, fields of view
LAB / HW: watch "VR Interface Design Pre-Vis Methods", build gaze prototype

W4, 2/13: how to pick up physics objects with motion controllers in Unity
LAB / HW: watch "Designing for Room-Scale VR"; build motion control prototype

W5, 2/20: [NO MONDAY CLASS] begin Midterm
LAB / HW: watch "Daydream Labs: Lessons from VR Prototyping"; iterate on midterm

W6, 2/27: [GDC] Midterm playtests, how to record video documentation
LAB / HW: read "The Veldt", finish midterm project, make video documentation

W7, 3/6: Midterm projects due, project post-partums
LAB / HW: watch "Being in the World"

3/13: [SPRING BREAK]

W8, 3/20: begin Final projects, phenomenology as critique of the Cave
LAB / HW: watch "Ways of Seeing" pt. 2, work on final

W9, 3/27: "gaze", modeling in Maya
LAB / HW: read Ryan Ch. 1, model a "virtual" object in Maya, work on final

W10, 4/3: "virtual", painting in Substance Painter
LAB / HW: read Ryan Ch. 2, paint a still life, work on final

W11, 4/10: "VR", **playtest Finals**
LAB / HW: read "Coffeehouse Conversations" pt 1, work on final

W12, 4/17: "simulation", animating in Maya
LAB / HW: read Murray ch. 6, work on final

W13, 4/24: "immersion", working with animation in Unity
LAB / HW: work on final

W14, 5/1: playtest Finals, panic
LAB / HW: work on final, make video documentation

W15, 5/8: [NO WEDNESDAY CLASS] Final project presentations, prep for end-of-year show

FINAL PROJECT DELIVERABLE DUE ON 5/15 NO FINAL EXAM

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.