VR Studio (GAMES-UT 124-001 / GAMES-GT 124-001)

Spring 2018, 4 units   MoWe 3:30-6:10pm   2 Metrotech (MAGNET), room 825
INSTRUCTOR: Robert Yang <ry14@nyu.edu>, office hours: room 856, TuTh 1-2pm
ASSISTANT: Hosni Auji <ha1249@nyu.edu> , office hours by appointment

COURSE DESCRIPTION:
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.

PREREQUISITES:
Intermediate Game Development (Undergraduate) and/or Game Studio 1 (Graduate)

COURSE STRUCTURE / FORMAT
This course meets twice a week. The lecture meeting is usually for instructional demos, discussion of readings, and critiques of student work. The lab meetings are primarily self-directed work time for students to work on projects and homework. Students are expected to spend at least 6 hours a week, outside of class meetings, on their homework.

COURSE OBJECTIVES / LEARNING GOALS:
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 VR game engine, and understand the basics of how to build a game for VR.

READINGS:
All course readings will be provided. However, here are some recommended books / texts:
- Narrative as Virtual Reality, by Marie-Laure Ryan
- Hamlet on the Holodeck, by Janet Murray

MATERIALS / TOOLS:
You will need the following for this class:
- A mid-spec "gamer" (or better) laptop… an old or slow laptop will struggle a lot
- A mouse (a cheap USB mouse is fine)
- A USB thumb drive (to transfer builds to the VR cart)
- Unity Engine 2017.3 (free personal edition) installed on your laptop

CLASS WEBSITE:
Demos, homework, notes at: https://github.com/radiatoryang/spring2018_vrstudio

ASSIGNMENTS:

- Weekly prototyping exercises
- Weekly readings: choose an option for your reading responses...
    - OPTION A: each week, write short responses to the reading, graded "pass/fail"
    - OPTION B: just one 500 word essay that compares 2 readings, graded "A-F"
- Final project: choose an option…
    - OPTION A: **a BFA capstone or MFA thesis project** that heavily uses VR
    - OPTION B: in groups of 1-4, make a **short polished VR game / experience**
- Midterm: prototype a motion controller interaction as a proof of concept for final
- Final design statement: undergrad = 250 words, graduate = 500 words + 2 citations

SCHEDULE (subject to change)

NOTE: homework is always due the week after assigned, on lecture day.
(e.g. Week 1 homework is due on Monday of Week 2) but always check wiki for updates

Week 1, 1/22: intro to VR, how to setup the VR hardware

- watch Star Trek: The Next Generation episode 1x15 "11001001"
- play: The Lab (Vive cart)

Week 2, 1/29: Unity review, talk about Allegory of the Cave

- watch Plato: The Allegory of the Cave https://www.youtube.com/watch?v=UQfRdl3GTw4
- build a 3D "cave allegory" with moving shadows and text labels
- play: Google Earth VR (Vive or Oculus cart)

Week 3, 2/05: native Unity VR integration, intro to VR build workflow

- read "A Brief History of Virtual Reality"
  http://mycours.es/gamedesign2016/presentations/a-brief-history-of-virtual-reality/
- build a very simple VR proto that evokes a moment in VR art history
- play: Medium (Oculus cart) and import your sculpture into Unity

Week 4, 2/12: intro to gaze interaction and raycasting

- watch "VR Interface Design Pre-Vis Methods"
  https://www.youtube.com/watch?v=id86HeV-Vb8
- build a small scene with at least 2 gaze interactions
- Play: Space Pirate Trainer (Vive or Oculus)

Week 5, 2/19: [NO MONDAY CLASS] intro to SteamVR + start midterm project

- Watch "Designing for Room-Scale VR" https://www.youtube.com/watch?v=U8mku0JvuLI
- Midterm project: prototype one motion controller interaction
- Play: Job Simulator (Vive or Oculus)

Week 6, 2/26: <u>playtest</u>**, more on motion control [+ Robert has to do a Games 101 talk]**
- watch "Lessons from VR Prototyping" https://www.youtube.com/watch?v=IGUmTQgbiAY
- Iterate on midterm prototype
- Play: Fantastic Contraption (Vive)

Week 7, 3/05: <u>playtest</u>**, more on motion control**
- Iterate on midterm prototype
- Record midterm prototype documentation, due on 3/12

[NO CLASS, SPRING BREAK, 3/12 - 3/18]

Week 8, 3/19: [NO CLASS, GDC 3/19-3/23]
- if you're doing a group final project, declare group members / project plan by 3/21

Week 9, 3/26: midterm debrief + begin final projects
- Iterate on final project, prepare for playtest
- Watch "Ways of Seeing" pt. 2 https://www.youtube.com/watch?v=m1GI8mNU5Sg
- Play: A Short History of the Gaze (Oculus) http://molleindustria.org/historyOfTheGaze/

Week 10, 4/02: discuss gaze interactions and the "gaze", <u>playtest</u>
- Iterate on final projects
- Read first half of Narrative as Virtual Reality, ch. 1 (pg. 25-39)
- Play: Superhot VR (Oculus)

Week 11, 4/09: discuss what is "virtual" about VR?
- Iterate on final projects, prepare for playtest
- Read "Coffeehouse Conversations"

Week 12, 4/16: discuss "simulation" theory, <u>playtest</u>
- Iterate on final projects
- Read Hamlet on the Holodeck, ch. 4 "Immersion" (all)
- Play: Accounting (Vive)

Week 13, 4/23: discuss "immersion"
- Iterate on final projects, prepare for playtest
- Read "Voices From a Virtual Past" https://www.theverge.com/a/virtual-reality/oral_history

Week 14, 4/30: discuss first wave VR history, <u>playtest</u>
- Iterate on final projects, prepare for playtest
- Watch "Stranger Playthings: ..." https://www.youtube.com/watch?v=AwJwr2zpwQc

Week 15, 5/07: [NO WEDS CLASS] <u>last playtest</u> **and class debrief**
- Finish final projects and submit final deliverables

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.

Final grade components: Participation 25%, Homework 25%, Midterm 15%, Final project 35%

Attendance & Participation

The attendance and participation portion of your grade is based on the following:
• Participation in class discussions and critiques
• 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.

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, which can be found online at: http://students.tisch.nyu.edu/page/home.html

TAKE CARE OF YOURSELF / ACCESSIBILITY

Your health and safety are a priority at NYU. If you experience any health or mental health issues during this course, we encourage you to utilize the support services of the 24/7 NYU Wellness Exchange 212-443-9999. All students who may require an academic accommodation due to a qualified disability, physical or mental, please register with the Moses Center 212-998-4980. Please let your instructor know if you need help connecting to these resources.

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