

PGTE 5591 A BUILDING WORLDS

Fall 2016 F 12:10-2:50 , 6 East 16th Street #1208

INSTRUCTOR: Robert Yang <yangr@newschool.edu>, office hours by appointment

ASSISTANT: Mikei Huang <michuang@newschool.edu>

OVERVIEW

This course combines practical instruction in code, 3D modeling, and iterative engineering processes, with theoretical inquiry into the politics of code and virtual embodiment. How do we represent 3D space in a computer? How do we represent a mind in a computer? How do we even feasibly explore and investigate these problems? This class focuses on process, workflow, and problem-solving skills that are valuable for any code language/development environment in any interactive digital context.

MATERIALS

A **laptop** computer with the following software installed:

- **Unity**, a 3D development environment (the “free” edition is all you'll need)
- **Autodesk Maya**, a 3D modeling tool (you all have free 3 year licenses from Autodesk)

LEARNING GOALS

- (1) understand use of **Unity** to develop 3D experiences, user interface, workflow
- (2) understand **C# code** and common control structures in code, develop code literacy
- (3) understand **3D modeling** tools and working in 3D space
- (4) understand **UI / UX** principles for playful and engaging interactive design
- (5) understand crucial philosophical concepts regarding computing / consciousness / worlds (Plato's Cave, Turing Test, Chinese Room, phenomenology, “ready-at-hand”, enframing)

ASSIGNMENTS / ASSESSABLE TASKS

Weekly readings / exercises: check the GitHub wiki for your weekly assignments

Midterm Project: an interactive autobiographical self-portrait, due 10/21

Final Project: an interactive world that responds directly to a class reading
you can form a group of 1-4 people, deliverable due 12/23

ATTENDANCE

- 1 unexcused absence incurs no penalty
- 2 unexcused absences will lower your grade by one level (e.g. A to B)
- 3 unexcused absences is grounds for automatic failure, we will have an Adult Conversation

STRUCTURE

The first half of each class meeting is a lecture / activity, the second half is lab / workshop time.
class website: github.com/radiatoryang/fall2016_buildingworlds/

To turn-in homework, click "Wiki" on the sidebar, and follow instructions. You will need a free GitHub account to do so. Homework is due before the start of the next class meeting.

SCHEDULE (subject to change)

9/2, Week 1: introduction, syllabus overview, introduction to Unity

homework: create a cave allegory with cubes + terrain tool, watch "Allegory of the Cave"

9/9, Week 2: review Allegories, intro to Maya and code + keyboard input

homework: sculpt a still-life of a technological object, watch "Ways of Seeing" episode 1

9/16, Week 3: review Sculptures, intro to vector math, the Turing Test, mouse input

homework: create an interactive Turing Test, read "Coffeehouse Conversation" pt. 1

9/23, Week 4: review Turing Tests, intro to physics simulation, more Maya

homework: make a Rube Goldberg machine, read "Coffeehouse Conversation" pt. 2

9/30, Week 5: review Goldbergs, code + physics applications, begin MIDTERM project

homework: conceptualize and prototype your MIDTERM project

10/7, Week 6: * WORKSHOP DAY, ART && CODE CONFERENCE @ CMU *****

homework: upload a MIDTERM prototype to get feedback

10/14, Week 7: * WORKSHOP DAY, STEAM DEV DAYS CONFERENCE *****

homework: upload a MIDTERM prototype to get feedback, upload MIDTERM documentation

10/21, Week 8: MIDTERMS ARE DUE, review midterms, intro to proc gen and instantiate

homework: read 10PRINT ch. 10 + 25; port 10PRINT to Unity in your personal variation

10/28, Week 9: review Ports, raycasting, Being in the World, start FINAL project

homework: prototype FINAL, finish watching Being in the World

11/4, Week 10: intro to feel, "Juice It or Lose It", simple screen shake

homework: iterate on FINAL

11/11, Week 11: intro to animation in Maya, working with animation in Unity

homework: iterate on FINAL

11/18, Week 12: how a GPU works, intro to shaders in Unity, PLAYTEST FINALS

homework: iterate on FINAL

11/25, Week 1x: * NO CLASS, THANKSGIVING *****

homework: iterate on FINAL

12/2, Week 13: real-time interactive mesh deformation in Unity

homework: iterate on FINAL

12/9, Week 14: PLAYTEST FINALS

homework: finish FINAL

12/16, Week 15: FINAL presentations, where to go from here?

FINAL GRADE CALCULATION:

Attendance / participation: 25% Homework assignments: 25%

Midterm project: 20% Final project: 30%

GRADING STANDARD

A Work of exceptional quality

A- Work of high quality

B+ Very good work

B Good work; satisfies course requirements. Satisfactory completion of a course is a grade of B or higher.

B- Below-average work

C+ Less than adequate work

C Well below average work

C- Poor work; lowest possible passing grade

F Failure

GM Grade missing for an individual

Grades of D are not used in graduate level courses.

Grade of W: The grade of W may be issued by the Office of the Registrar to a student who officially withdraws from a course within the applicable deadline. There is no academic penalty, but the grade will appear on the student transcript. A grade of W may also be issued by an instructor to a graduate student (except at Parsons and Mannes) who has not completed course requirements nor arranged for an Incomplete.

Grade of WF: The grade of WF is issued by an instructor to a student (all undergraduates and all graduate students) who has not attended or not completed all required work in a course but did not officially withdraw before the withdrawal deadline. It differs from an "F," which would indicate that the student technically completed requirements but that the level of work did not qualify for a passing grade. The WF is equivalent to an F in calculating the grade point average (zero grade points), and no credit is awarded.

Grades of Incomplete: The grade of I, or temporary incomplete, may be granted to a student under unusual and extenuating circumstances, such as when the student's academic life is interrupted by a medical or personal emergency. This mark is not given automatically but only upon the student's request and at the discretion of the instructor. A Request for Incomplete form must be completed and signed by student and instructor. The time allowed for completion of the work and removal of the "I" mark will be set by the instructor with the following limitations: [You should include one the following standards, depending on the level of your course].

Graduate students: Work must be completed no later than one year following the end of the class. Grades of "I" not revised in the prescribed time will be recorded as a final grade of "WF" (for Parsons and Mannes graduate students) or "N" (for all other graduate students) by the Office of the Registrar. The grade of "N" does not affect the GPA but does indicate a permanent incomplete.

OTHER POLICIES

E-Mail

Allow at least a day for a response. In general, I am here to help you - within reason. I am happy to talk you through a process, but I will never write your code for you or do your projects for you.

Office Hours

By appointment, just e-mail me or talk to me after class to setup a time. I'm happy to answer short / small questions, before and after class too, time permitting.

Responsibility

Students are responsible for all assignments, even if they are absent. Late papers, failure to complete the readings assigned for class discussion, and lack of preparedness for in-class discussions and presentations will jeopardize your successful completion of this course.

Participation

Class participation is an essential part of class and includes: keeping up with reading, contributing meaningfully to class discussions, active participation in group work, and coming to class regularly and on time.

Attendance

Faculty members may fail any student who is absent for a significant portion of class time. A significant portion of class time is three absences for classes that meet once per week and four absences for classes that meet two+

times per week. Lateness or early departure may also translate into one full absence.

Delays

In rare instances, I may be delayed arriving to class. If I have not arrived by the time class is scheduled to start, you must wait a minimum of thirty minutes for my arrival. In the event that I will miss class entirely, a sign will be posted at the classroom indicating your assignment for the next class meeting.

Academic Integrity

This is the university's Statement on Academic Integrity: "Plagiarism and cheating of any kind in the course of academic work will not be tolerated. Academic honesty includes accurate use of quotations, as well as appropriate and explicit citation of sources in instances of paraphrasing and describing ideas, or reporting on research findings or any aspect of the work of others (including that of instructors and other students). These standards of academic honesty and citation of sources apply to all forms of academic work (examinations, essays, computer work, art and design work, oral presentations, and other projects)." It is the responsibility of students to learn the procedures specific to their discipline for correctly and appropriately differentiating their own work from that of others. Compromising your academic integrity may lead to serious consequences, including (but not limited to) one or more of the following: failure of the assignment, failure of the course, academic warning, disciplinary probation, suspension from the university, or dismissal from the university. Every student at Parsons signs an Academic Integrity Statement as a part of the registration process. Thus, you are held responsible for being familiar with, understanding, adhering to and upholding the spirit and standards of academic integrity as set forth by the Parsons Student Handbook.

Guidelines for Written Assignments

Plagiarism is the use of another person's words or ideas in any academic work using books, journals, internet postings, or other student papers without proper acknowledgment. For further information on proper acknowledgment and plagiarism, including expectations for paraphrasing source material and proper forms of citation in research and writing, students should consult the Chicago Manual of Style (cf. Turabian, 6th edition). The University Writing Center also provides useful on-line resources to help students understand and avoid plagiarism. See <http://www.newschool.edu/admin/writingcenter/> Students must receive prior permission from instructors to submit the same or substantially overlapping material for two different assignments. Submission of the same work for two assignments without the prior permission of instructors is plagiarism.

Guidelines for Studio Assignments

Work from other visual sources may be imitated or incorporated into studio work if the fact of imitation or incorporation and the identity of the original source are properly acknowledged. There must be no intent to deceive; the work must make clear that it emulates or comments on the source as a source. Referencing a style or concept in otherwise original work does not constitute plagiarism. The originality of studio work that presents itself as "in the manner of" or as playing with "variations on" a particular source should be evaluated by the individual faculty member in the context of a critique. Incorporating ready-made materials into studio work as in a collage, synthesized photograph or paste-up is not plagiarism in the educational context. In the commercial world, however, such appropriation is prohibited by copyright laws and may result in legal consequences.

Student Disability Services

In keeping with the University's policy of providing equal access for students with disabilities, any student with a disability who needs academic accommodations is welcome to meet with me privately. All conversations will be kept confidential. Students requesting any accommodations will also need to meet with Jason Luchs in the office of Student Disability Services, who will conduct an intake, and if appropriate, provide an academic accommodation notification letter to you to bring to me. At that point I will review the letter with you and discuss these accommodations in relation to this course. Mr. Luchs' office is located in 79 Fifth Avenue, 5th floor. His direct line is (212) 229-5626 x3135. You may also access more information through the University's web site at <http://www.newschool.edu/studentsservices/disability>