PSAM 5600-B CURRENTS: BUILDING WORLDS

F 12:10-2:50 , 6 East 16th Street #1208
Robert Yang <yangr@newschool.edu>, office hours by appointment

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)
- **SourceTree**, a Git client. (requires free registration)

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 in Maya and digital representation of 3D polygons in data
(4) understand **UI / UX** principles for playful and engaging interactive design
(5) understand basic **version control** / collaboration practices using Git
(6) understand crucial philosophical concepts regarding computing and consciousness
(Turing Test, Chinese Room, phenomenology, "ready-at-hand", enframing, authenticity)

ASSIGNMENTS

Weekly readings / exercises: do them! Readings / videos are especially important in this class. As instructor, I reserve the right to conduct pop quizzes to check for understanding.
Midterm Project: a hand-crafted "world" with at least 1 exterior, 1 interior, and 1 gate
Final Project: a procedurally generated world with 1+ AI and 1+ "juicy" interaction accompanied by a 500 word artist's statement where you must cite at least 3 readings

CLASS WEBSITE

github.com/radiatoryang/buildingworlds_fall2014/
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.

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 a talk

SCHEDULE (subject to change)

Week 1: introduction, syllabus overview, introduction to Unity
homework: create a cave allegory with cubes + terrain tool, watch “Allegory of the Cave”

Week 2: physical programming, intro to code and inputs
homework: create a textual world, read 10PRINT ch. 10 + 15

Week 3: 3D modeling and intro to Maya, vector math, the Turing Test
homework: create an interactive Turing Test, read “Coffeehouse Conversation” pt. 1

Week 4: Turing Tests, Unity physics, more Maya modeling
homework: make a Rube Goldberg machine, read “Coffeehouse Conversation” pt. 2

Week 5: rigidbody controller / buttons, <u>begin MIDTERM project</u>
homework: graybox your midterm world, prototype MIDTERM world / interaction

Week 6: raycasting, continue MIDTERM project
homework: finish MIDTERM world, watch “Ways of Seeing” episode 1

Week 7: <u>MIDTERM presentation</u>s, intro to sculpting
homework: sculpt self-portrait + make a model viewer, read The Chinese Room

Week 8: The Chinese Room, intro to procedural generation
homework: port 10PRINT in your personal variation; read 10PRINT ch. 20 + 25

Week 9: Vlambeer-style world generation
homework: create a maze generator with 1 guaranteed path, play Blockly at least to level 9

Week 10: discuss Blockly, watch Being in the World, <u>start FINAL project</u>
homework: prototype FINAL world gen, finish watching Being in the World

Week 11: introduction to Game Feel, “Juice It or Lose It”
homework: prototype a FINAL juicy interaction, read Game Feel ch. 1 + 9

Week 12: coroutines, screen shake; workshop
homework: work on FINAL, read guide to “Question Concerning Technology”

Week 13: introduction to shaders; workshop
homework: work on FINAL, read “Carpentry” from Bogost's “Alien Phenomenology”

Week 14: real-time interactive mesh deformation; workshop
homework: finish FINAL, finish writing FINAL artist's statement

Week 15: <u>FINAL presentation</u>s, intro to virtual reality, eat pizza

RUBRIC
F; Did not submit work, or grossly problematic, or with little or no demonstrated effort.
D; Met minimum requirements, but shows minimal engagement with class material in its execution.
C; Competent work, but shows little critical engagement or attempt at novel contexts / arrangement.
B; Very good work of some complexity, clear in its methods, distinct in its execution with minor errors.
A; Exceptionally good work, very well organized, demonstrates substantial reflection and effort.
I; Incomplete. Deferment of grade, delayed for unavoidable / legitimate reasons. Given only with the written approval of the instructor and the program director. The Request for an Incomplete Grade form must be filled out by the student and instructor prior to the end of the semester.

Late work: Must be turned-in the week after, at the latest. Grade will drop one letter. No feedback given. For undergraduate students, if a grade of incomplete is approved, outstanding work must be submitted by the seventh week of the following Fall semester (for Spring and Summer courses) or by the seventh week of the following Spring semester (for Fall courses). Otherwise, a grade of I will automatically convert to a permanent unofficial withdrawal (WF) after four weeks. For graduate students, the deadline for completion of an incomplete is one year though a shorter period may be imposed at the discretion of the instructor.

OTHER POLICIES

E-Mail
Allow at least a day for a response, though I will sometimes reply more quickly. 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/studentservices/disability