Design and Technology, AMT, Parsons School of Design

PUDT 2101 Core Lab Objects: Game

Fall 2017, Tuesday & Thursday 15:50 - 18:30
Location:
Tuesday - 6 East 16th Street 1206
Thursday - 6 East 16th Street 1106

Faculty: Qinzi Tan
Email: qinzi.tan@newschool.edu (Office hours by appointment/email)

Course Description

This course provides practical instruction for the production of game and digital experiences. The lab will focus on the exploration into the tool Unity3d on programming fundamentals, interactive engineering process, game feel, 3D modeling and digital design. Student will also learn various brainstorming techniques, methods for rapid prototyping and problem-solving skills. By the end of the class, students will have a solid understanding of Unity3d editor, C# coding basics and a digital design workflow.
The studio & the lab will share the final project - meaning both faculty can help critique, advice & troubleshoot student works.

Materials

1. **Laptop**
2. **Unity3d (2017.1)**: game engine
   * Free Personal version will be enough for this course (https://unity3d.com/)
3. **Autodesk Maya**: 3D modeling tool
   * Sign up with your newschool.edu email to get a 3-years license for free (https://www.autodesk.com/education/free-software/maya)

Learning Outcomes

By the successful completion of this course, students will be able to:

1. Understand the use of Unity3d for developing digital games and 2D/3D experiences
2. Code in C# for Unity3D
3. Work in 3D space
4. Understand basic 3D modeling skills
5. Understand UI/UX principles for interactive design and game experiences

Assessable Tasks

Homeworks: will be assigned in class every Tuesday and Thursday

Thursday Quiz: we will have a quiz at the beginning of every Thursday
Midterm Project: will be assigned in class on 5 Oct (due 10pm, 19 Oct)
Final Project: an interactive digital project build with Unity3d (Due 6pm, 15 Dec)

Course Outline

Week 1 - Week 6
Unity Fundamentals, C# Programming and Maya Basics

Week 7 - Week 8
Midterm Project

Week 9 - Week 10
Review, Unity & External Devices, Debugging

Week 11 - Week 16
Final Projects

WEEK	DATE	CLASSWORK	HOMEWORK
Week 1	Aug 29	Introductions Class Overview/ Syllabus Review What is Unity? Unity Interface & Editor Asset	Setup Github account "Mess Around" with Unity
Week 1	Aug 31	Review Homework WebGL Building & Itch.io Github/SourceTree Audio & Sound Materials, Lighting, Camera Guest Speaker: Justin Bakse	Pick a landscape/space that is important or meaningful to you, and build a digital version in Unity. (Either it's in the real world or in a fantasy environment) Artistic visual style is expected.
Week 2	Sept 5	Physics Simulation: Rigid Body, Force, Colliders etc.	Rube Goldberg Machine Concept & Sketch
Week 2	Sept 7	C# Basics Vector Math	Rube Goldberg Machine (script required)

		Transform Time.deltaTime	
Week 3	Sept 12	Inputs: keyboard & mouse GetComponent GameObject.Find Activating/Enabling IF statement	Add mouse/keyboard interaction to the Rube Goldberg Machine Project
Week 3	Sept 14	Vector Math Advanced OnMouseDown()	Add advanced vector math to your Rube Goldberg Machine
Week 4	Sept 19	UI EventSystem	Design and build a next generation of HCI (naked-eye AR interface) Precedent: http://hyper-reality.co/
Week 4	Sept 21	Rosh Hashanah Holiday (no class)	
Week 5	Sept 26	Maya Basics	Make a 3D model in Maya and animated it in unity with script
Week 5	Sept 28	Maya Basics Humanoid 3D Model Maximo Rigging & Animation Workflow (www.mixamo.com)	Build a scene with least one
Week 6	Oct 3	Prefab Instantiation Destroy	Build a City Generator or Something Like *"Golconda"* *(https://en.wikipedia.org/wiki/Golconda_(Magritte))*
Week 6	Oct 5	Raycasting For Loop Array	**Midterm Project Ideas** Make a simple prototype to present your idea
Week 7	Oct 10	Casual presentation	Midterm Project
Week 7	Oct 12	In-class working One-on-One Meeting	Midterm Project
Week 8	Oct 17	In-class working One-on-One Meeting	Midterm Project

Week 8	Oct 19	Midterm Presentation & Playtesting	Midterm Due
Week 9	Oct 24	Lecture Topic: communication between Unity and external devices (VR/AR, Arduino, Controller, Internet)	No homework, chill and relax!
Week 9	Oct 26	AR/VR Experience Day	**Final Project Ideas**
Week 10	Oct 31	Unity Review One-on-One Meeting: discuss possible directions for your final project	Final Project Proposal
Week 10	Nov 2	Code Challenge Day: Let's make a game in 150 minutes all together *(pseudo code, debugging, googling)*	Final Project Proposal
Week 11	Nov 7	Presentation: Final Proposal *(presenting with a rapid prototype is strongly encouraged)*	Final Project
Week 11	Nov 9	In-class working One-on-One Meeting	
Week 12	Nov 14	One-on-One Meeting: **First Prototype**	
Week 12	Nov 16	In-class working	
Week 13	Nov 21	In-class working	
Week 13	Nov 23	Thanksgiving (no class)	
Week 14	Nov 28	Presentation & Play-testing: **Second Prototype**	
Week 14	Nov 30	In-class working	
Week 15	Dec 5	In-class working	
Week 15	Dec 7	One-on-One Meeting	

Week 16	Dec 12	Final Critiques: guest crits will be invited	Modify final project
Week 16	Dec 14	Final Playtest	Upload final project to website with description (Due: 6pm @ Dec/15/2017)

Final Grade Calculation

Participation / Attendance	5%
Tuesday Homework	10%
Thursday Homework	15%
Thursday Quiz	10%
Midterm Project	25%
Final Project	35%
TOTAL	100%

Grading Standards

A student's final grades and GPA are calculated using a 4.0 scale. Please note that while both are listed here, the 4.0 scale does not align mathematically with the numeric scale based on percentages of 100 points.

A [4.0; 95 – 100%]
Work of exceptional quality, which often goes beyond the stated goals of the course

A- [3.7; 90 – <95%]
Work of very high quality

B+ [3.3; 87 – <90%]
Work of high quality that indicates higher than average abilities

B [3.0; 83 – <87%]
Very good work that satisfies the goals of the course

B- [2.7; 80 – <83%]
Good work

C+ [2.3; 77 – <80%]
Above-average work

C [2.0; 73 – <77%]

Average work that indicates an understanding of the course material; passable
Satisfactory completion of a course is considered to be a grade of C or higher.

C- [1.7; 70 – <73%]
Passing work but below good academic standing

D [1.0; 60 – <70%]
Below-average work that indicates a student does not fully understand the assignments; Probation level though passing for credit

F [0.0; 0 – <60%]
Failure, no credit

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 Z

The grade of Z is issued by an instructor to a student 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.

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].

Undergraduate students: Work must be completed no later than the seventh week of the following fall semester for spring or summer term incompletes and no later than the seventh week of the following spring semester for fall term incompletes. Grades of "I" not revised in the prescribed time will be recorded as a final grade of "F" by the Office of the Registrar.

School Resources

The university provides many resources to help students achieve academic and artistic excellence.

These resources include:

- The University (and associated) Libraries: http://library.newschool.edu
- The University Learning Center: http://www.newschool.edu/learning-center
- University Disabilities Service: www.newschool.edu/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 contact Student Disability Service (SDS). SDS will conduct an intake and, if appropriate, the Director will provide an academic accommodation notification letter for you to bring to me. At that point, I will review the letter with you and discuss these accommodations in relation to this course.

Divisional, Program and Class Policies

● Responsibility

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

● Participation

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

● Attendance

Parsons' attendance guidelines were developed to encourage students' success in all aspects of their academic programs. Full participation is essential to the successful completion of coursework and enhances the quality of the educational experience for all, particularly in courses where group work is integral; thus, Parsons promotes high levels of attendance. Students are expected to attend classes regularly and promptly and in compliance with the standards stated in this course syllabus.

While attendance is just one aspect of active participation, absence from a significant portion of class time may prevent the successful attainment of course objectives. A significant portion of class time is generally defined as the equivalent of three weeks, or 20%, of class time. Lateness or early departure from class may be recorded as one full absence. Students may be asked to withdraw from a course if habitual absenteeism or tardiness has a negative impact on the class environment.

Whether the course is a lecture, seminar or studio, faculty will assess each student's performance against all of the assessment criteria in determining the student's final grade.

● Canvas

Use of Canvas may be an important resource for this class. Students should check it for announcements before coming to class each week.

● 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.

● Electronic Devices

The use of electronic devices (phones, tablets, laptops, cameras, etc.) is permitted when the device is being used in relation to the course's work. All other uses are prohibited in the classroom and devices should be turned off before class starts.

● Academic Honesty and Integrity

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.

Students are responsible for understanding the University's policy on academic honesty and integrity and must make use of proper citations of sources for writing papers, creating, presenting, and performing their work, taking examinations, and doing research. 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. The full text of the policy, including adjudication procedures, is found at http://www.newschool.edu/policies/# Resources regarding what plagiarism is and how to avoid it can be found on the Learning Center's website: http://www.newschool.edu/university-learning-center/student-resources/

The New School views "academic honesty and integrity" as the duty of every member of an academic community to claim authorship for his or her own work and only for that work, and to recognize the contributions of others accurately and completely. This obligation is fundamental to the integrity of intellectual debate, and creative and academic pursuits. Academic honesty and integrity 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 faculty members and other students). Academic dishonesty results from infractions of this "accurate use". The standards of academic honesty and integrity, and citation of sources, apply to all forms of academic work, including submissions of drafts of final papers or projects. All members of the University community are expected to conduct themselves in accord with the standards of academic honesty and integrity. Please see the complete policy in the Parsons Catalog.

- Intellectual Property Rights: http://www.newschool.edu/policies/#