Parsons School of Design

Digital Design

Core Studio: Environments | Game Design

PUDT 2201 B; CRN 1493

Spring 2020

Tues/Thurs 12:10-2:50p | 6 East 16th Street 1204A

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Office hours by appointment

Course Description

This course is focused on the practice of designing environments, in the context of both digital games and authored, interactive experiences more broadly. We will examine the principles that game designers, environment designers, and level designers use to structure and present spaces, to make them readable and navigable, to create challenge and engagement, and to set the stage for players to have a particular desired experience (often, but not necessarily, one of the many different flavors of "fun.") Students are asked to examine and analyze a number of examples of good level design in pre-existing digital or non-digital games, and to apply their observations to non-game and non-digital spaces, as well. In a series of solo and collaborative projects, students will design, build, playtest, and refine a number of games in different styles and genres, each exploring the theme of environment through a different lens. The goal of the course is to provide a working knowledge of what an environment is and how to apply good environment design to frame and structure meaningful play.

Course Philosophy

This class is about creating, deconstructing, and analyzing environments using the lens of play. We will explore games and non-games in physical and digital spaces. Adept game designers cannot rely on just text to create living environments like traditional storytellers do, but must also use numbers, objects, lights, sounds, and that ever elusive “game feel” to impart their vision of the world they’re creating to their audiences.

Traditional level design practices in the field of games deal with specific quantities of things or specific numerical values dictating game object behaviors. We will look at these more standard methodologies for environmental design, and also attempt to push the word “environment” to its conceptual limit.

Learning Outcomes

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

1. Demonstrate core skills and knowledge related to environmental design.
2. Develop critical thinking skills related to the analysis of game forms.
3. Approach creative projects with a design mindset and articulate aesthetic and experiential design goals.
4. Develop techniques for expressing and producing emotions through environmental and level design.
5. Incorporate the process of game testing into development.
6. Use level design as an approach to scaffold a complex story or data set.

Assessable Tasks

Participation

Involvement in discussions, critiques, demos and presentations is critical for each student and the class to excel. Thus you will be graded on actual participation. Just showing up is not good enough.

Playtests

Playtests are structured play and design sessions where students will test and share feedback on prototype and work-in-progress builds of one another's work, often followed by brief reflective writing or in-class discussion. There will be one or more playtesting sessions for each game project assigned. Critical feedback from sessions is expected to be incorporated into the next demo.

Projects

Project assignments are individual or group game projects accomplished in 3-4 week sprints. They will build on each other both in concept and technical expectations. The focus will be on rapid development and iterative design. Games will go from concept to playable demo in one week. Games will then be presented, playtested, and refined. After playtesting, games will go from demo to full-featured product. Each assignment will be submitted via your itch.io page, accompanied by a writeup and some documentation.

Project 1 - Environmental Storytelling (Walking Simulator)

Create a 3D, first-person–perspective walking simulator that embodies a specific emotion, feeling, or mood.

There must be no combat, items, or any player action (verbs) other than movement. No picking things up, pushing buttons, opening doors, etc., but you can use tools like invisible colliders and event timers to create an unfolding experience or sequence of events as the player moves through the space.

The environment should instill a specific feeling (or series of feelings) in the player and use the space to tell a coherent narrative. How does the player's movement shape the experience? What mood does the atmosphere evoke? Consider elements such as sound, lighting, color, and layout of the space.

Project 2 - Worlds in Text (IF)

Create a short interactive fiction piece using Twine.

Your piece must be set in the original world you developed in the World Bible exercise, building on the worldbuilding work already performed, and express a unique sense of place. The piece should not be strictly linear and must make meaningful use of player choice.

Additionally, when you present the piece, be prepared to show and discuss the map of the narrative structure, explaining the model you used and why. How do you the author curate the experience while still allowing players to choose their own path?

Project 3 - Impossible Environments (VR)

Create a VR game that explores the possibilities of embodiment in a virtual space. What kind of place could you represent in VR

that wouldn't be possible in the real world? What kind of unconventional body could you inhabit?

Don't attempt to realistically simulate or reproduce the real world or natural environments. Instead, experiment with abstract, expressive, unreal objects and spaces. Think about impossible geometry, allegorical constructs, violating the laws of physics, and taking your players somewhere no one's ever been before. Play with light, texture, distance, scale, and movement.

But don't just chase novelty for novelty's sake. How can you bend the rules of reality to create a structured, meaningful experience for the player? What do you want the player to *feel*?

You must also take into account the limitations of VR and extend the necessary consideration to your users so they feel comfortable and safe while they enjoy your experience. Disorientation and nausea should *not* be on the menu.

Project 4 - Sensory S(t)imulation

Create a digital game that eliminates or remaps another sense onto one of the primary senses used in games (visual or audio), or incorporates a new sensory experience in an unexpected way.

Consider how a space might be experienced or mapped in unconventional ways, privileging senses other than sight. How could you create a psychogeography of smell, or sound?

Examples could include an audio-only game; a game that represents sound visually; a game that represents smell, taste, or touch using sound and/or visuals; or even a game with special peripherals incorporating actual touch/smell/taste experiences.

Extra Credit

If you go to an external event dealing with games, art, or design (a game jam, talk, demo, playtest, etc.), write a short paper (300-500 words) on the topic, and include a couple of pictures you took, I'll give you an extra 2% per paper turned in. These papers are not a mere description of what happened, but your critique of the ideas or projects presented.

There are literally game events every week in the NYC area, sometimes several a day, most of them free. You can find events on the IGDA NYC calendar at http://igda.nyc/calendar or follow @NYCGameDev on Twitter for automated notices of events happening the next day.

Extra credit may also be given on any assignment where you go beyond the minimum requirements, at the instructor's discretion.

Final Grade Calculation

Attendance & Class Participation 15%

Writing 25%

Projects 65%

Total 100%

Course Outline

The course is divided into four major units, with a project due at the end of each.

Weeks 1–5: Worlds

Group Project: Environmental Storytelling (Walking Simulator)

Weeks 6–7: Narratives

Solo Project: Worlds in Text (IF)

Weeks 8–11: Immersion

Group Project: Impossible Environments (VR)

Weeks 12–16: Experience

Group Project: Sensory S(t)imulation

Schedule

Week 1 (1/21 & 1/23)

- Class Overview
- Introductions
- What you want to get out of this class?
- Syllabus Review
- Introduce Project 1
- Form Groups
- Begin Brainstorming
- Lab
    - Review/Basics
    - Environmental Response
        - Changing Materials via script
    - First Person Controller
        - Asset store -> Standard Assets

Week 2 (1/28 & 1/30)

- Interaction in 3D
- Fist Person Character Controller
- Lab
    - 3d Audio
        - Spatial Blend
        - Min/Max Distance
    - Demo: Playing sound via script
        - OnTriggerEnter
        - PlayOneShot
        - Play
        - OnCollisionEnter

    - Arrays

Week 3 (2/4 & 2/6)

- Intro to Blender
- Texturing
- Arrays/Loops

Week 4 (2/11 & 2/13)

- Intro to Lighting
- Workshop Projects

Week 5 (2/18 & 2/20)

- Project 1 Presentations (2/18)
- Twine
- Rigging a 3d Character w Mixamo

Week 6 (2/25 & 2/27)

- Generative Meshes
- Project 2 Workshop

Week 7 (3/3 & 3/5)

- Project 2 Presentations (3/4 & 3/5)
- Publishing
- Scene Manager
- Titles
- Game over
- Escape to quit
- Hide the resolution dialogue

Week 8 (3/10 & 3/12)

- Intro to VR

Week 9 (3/17 & 3/19)

SPRING BREAK

Week 10 (3/24 & 3/26)

- Project 3 Workshop

Week 11 (3/31 & 4/2)

- Camera, Lighting, rotation, Raycasting
- Lerp, LookAt, Coroutines
- Particle Systems

Week 12 (4/7 & 4/9)

- Work on Project 3
- Project 3 Presentations (4/8)
- Introduce Project 4

Week 13 (4/14 & 4/16)

- 3d Audio

Week 14 (4/21 & 4/23)

- Special Topics TBD

Week 15 (4/28 & 4/30)

- Project 4 Workshop

Week 16 (5/5 & 5/7)

- Project 4 Presentations (5/5)

Required Materials

REQUIRED Text

John Sharp and Colleen Macklin, *Games, Design and Play: A Detailed Approach to Iterative Game Design*

REQUIRED Software

Unity 3D (http://unity3d.com/)

Unity Development Docs (http://docs.unity3d.com)

Unity Learning Modules (http://unity3d.com/learn/tutorials)

REQUIRED Hardware

Laptop with Unity installed

Digital Storage & Data Loss

All work should be saved and backed up. Digital information does not exist unless it is saved in at least two locations (ie: a hard drive and a USB drive). Data loss for any reason is not an excuse. You have been warned. Do not rely on the drives in the labs, the drop box is emptied every day and there is no guarantee that your work will be safe in the Work in Progress drives.

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.

Making Center

The Making Center is a constellation of shops, labs, and open workspaces that are situated across the New School to help students express their ideas in a variety of materials and methods. We have resources to help support woodworking, metalworking, ceramics and pottery work, photography and film, textiles, printmaking, 3D printing, manual and CNC machining, and more. A staff of technicians and student workers provide expertise and maintain the different shops and labs. Safety is a primary concern, so each area has policies for access, training, and etiquette that students and faculty should be familiar with. Many areas require specific orientations or trainings before access is granted. Detailed information about the resources available, as well as schedules, trainings, and policies can be found at resources.parsons.edu.

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.

Grading standards

Grading Rubric (Projects)

Every project will be evaluated on 6 aspects: *Presentation*, *Design*, *Interaction*, *Creativity*, *Effort*, and *Craftsmanship*. Your grade will be an average of these elements.

Presentation

A: The presentation is clear and audible with good use of visuals. It shows the process and logic behind the development of the project. It positions the work in relation to the larger culture and community, and other work that has set historical precedents

with similar themes.

B: The presentation was not succinct at times and visuals were not used effectively. Development was addressed but not deeply. Research was done on the project's relationship to culture, history, and other work but this information what not conveyed as effectively as it could have been.

C: The presentation was light on information or rambling, visuals were sparse, reading from notes. Development was skimmed on. It is clear that only minimal research was done on the culture and history related to the project.

D: The student was clearly not prepared to present, most visuals are missing. The student is trying and failing to wing it.

F: The student fails to present.

Design Fundamentals

A: The project was carefully planned, with the process clearly documented. It shows an awareness of the elements and principles of design, chose color schemes carefully, used space effectively. Visually striking and well documented.

B: The project applies the principles of design while using one or more elements effectively; showed an awareness of filling the space adequately. Visually striking but design process inadequately documented or vice versa.

C: The project is adequate, but shows little evidence that an overall composition was planned. Visually lacking and under-planned.

D: The project was completed and turned in, but showed little evidence of any understanding of the elements and principles of art; no evidence of planning. Ugly, but in a bad way.

F: The artwork was never completed.

Elements of Interaction

A: The project has transparent affordances, agency for the interactor, and was well mapped out with interaction stories, interactor profiles, and wireframes or storyboards. Intentions of the creator are reflected in the interaction.

B: The project is engaging, but has discernibility issues, inadequate framing, or was only half planned out. Unintentionally difficult to use but largely accomplishes the creator's goals.

C: The project is difficult to interact with, experience is hampered by inadequate planning, or fails to take advantage of the natural affordances of the Digital Medium. The Interaction Design works against the creator's goals.

D: The project was turned in, but is thrown together without fully mapping out an interaction framework. Works, sorta...

F: The project demonstrates a clear misunderstanding of affordance, discernibility, no wireframes or storyboards, and lack of agency.

Creativity/Originality

A: The student explored several choices before selecting one; generated many ideas; tried unusual combinations or changes on several ideas. The project engages with culture in a new way. *I wish I thought of that.*

B: The project is loosely based on someone else's idea, but creates a new understanding of the idea. Alternately, the creative decision making is logical, rather than expansive. *Obvious ideas executed well.*

C: The project lacks originality. It might have been copied work, or uses staid methods of interaction or execution. *Ripped off; I've seen this before.*

D: The project is essentially a modification of another work. *Highly derivative or hackneyed.*

F: The project is completely derivative, recycled, or stolen.

Effort and Perseverance

A: The project was continued until it was complete as the student could make it. The student's effort goes beyond the project's requirements.

B: The project is complete, but with a little more effort it would be outstanding.

C: The student finished the project, but it could have been improved with more effort. The project is an adequate interpretation of the assignment, but lacks finish.

D: The project was completed with minimum effort.

F: The project is not finished.

Craftsmanship and Skill

A: The project is beautiful and patiently done. Beautiful, no bugs, and performs exactly as planned.

B: The project is beautiful, but lacks interaction. Alternately, the interaction is great, but the art is placeholder or inadequate. The project has "programmer art" or "artist code".

C: The project is careless in its execution. The code has bugs, the animations are lacking, or the project doesn't adequately walk the participant through the experience. Looks or feels unfinished.

D: The project has "programmer art" and "artist code".

F: Project nearly fails to run.

Grading Rubric (Writing assignments)

Every writing assignment will be evaluated on 5 aspects: *Focus*, *Content*, *Organization*, *Research*, and *Mechanics & Style*. Your grade will be an average of these elements.

Unless an extension is requested and received at least 3 days before the due date, late assignments will receive a full letter grade deduction for each day late.

Once the grade and comments are posted, you have the option to revise/rewrite the assignment to incorporate the feedback and resubmit it within one week for a revised grade.

Focus

A: Purpose is clear. Paper addresses the assigned topic and all questions or required elements of the task concisely.

B: Shows awareness of purpose. Addresses all required elements to a basic level, or addresses most but does so thoroughly.

C: Shows limited awareness of purpose. Addresses some required elements but misses or shortchanges others. Strays from main topic or includes unrelated arguments and details.

D: Purpose is vague or unclear. Paper fails to address several of the required elements or does so inadequately. Paper is largely off-topic or discusses irrelevant detail.

F: Paper misses the point, is completely off-topic, irrelevant, or incoherent.

Content

A: Exceptionally well-presented and argued; ideas are detailed, well-developed, supported with

specific evidence & facts, as well as examples and specific details. Reflects mastery of concepts discussed. Shows especially incisive or original thought.

B: Well-presented and argued; ideas are detailed, developed and supported with evidence and details, mostly specific. Reflects good understanding of concepts discussed. Shows clear and critical thinking.

C: Content is sound and solid; ideas are present but not particularly developed or supported; some evidence, but usually of a generalized nature. Reflects basic understanding of concepts discussed.

D: Content is not sound. Reflects weak or no understanding of concepts discussed.

F: Content is irrelevant, or text is incoherent or content-free.

Organization

A: Well-planned and well-thought out. Includes title, introduction, statement of main idea, transitions and conclusion. All paragraphs have clear ideas, are supported with examples and have smooth transitions.

B: Good overall organization, includes the main organizational tools. Most paragraphs have clear ideas, are supported with some examples and have transitions.

C: There is a sense of organization, although some of the organizational tools are used weakly or missing. Some paragraphs have clear ideas, support from examples may be missing and transitions are weak.

D: Poor sense of organization. Paragraphs lack clear ideas.

F: No sense of organization or clarity of ideas.

Research

A: Sources or works referenced are exceptionally well-integrated and they support claims argued in the paper very effectively.

B: Sources or works referenced are well integrated and support the paper's claims.

C: Sources or works referenced support some claims made in the paper, but might not be integrated well within the paper's argument.

D: The paper does not use adequate research or if it does, the sources or works discussed are not integrated well.

F: The project does not use sources or references.

Mechanics & Style

A: There is clear use of a personal and unique style of writing, well suited to audience and purpose. Excellent grammar, spelling, syntax and punctuation.

B: There is a good attempt at a personal style. Generally clear and suited to the audience or purpose. A few errors in grammar, spelling, syntax and punctuation, but not many.

C: There is some attempt at style, but reads as flat and perhaps uninteresting in content, which is usually generalized and clichéd. Shows a pattern of errors in spelling, grammar, syntax and/or punctuation.

D: Little attempt at style, with frequent and serious mechanical errors that hamper comprehension.

F: No attempt at style. Grave and continuous errors.

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.

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:

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.

Divisional, Program and Class Policies

Treat class time as an opportunity.

Arrive to class on time, with all materials, ready to work steadily throughout the studio.

Complete assignments on time.

Participate in class discussions and critiques.

Confront difficulties in your work in the spirit of learning, creative exploration and growth.

Ask for help from your instructors when needed.

Respect your fellow students at all times.

Disruptive behavior is not tolerated.

No food or drinks near computers!

Responsibility

Students are responsible for all assignments, even if they are absent from a class. 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, and 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. 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. Phones must be set to silent for the duration of the class.

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/#