Level Design Studio (GAMES-UT 321-001 / GAMES-GT 321-001)

Spring 2018 4 units MoWe 12:30-3:15pm 2 Metrotech Center, room 845
INSTRUCTOR: Robert Yang <ry14@nyu.edu>, office hours: room 856, TuTh 1-2pm

COURSE DESCRIPTION:

This course focuses on the theory and practice of level design for 3D video games. Students will develop fluency in conveying experience design goals and building 3D spaces, gaining a practical understanding of architecture, lighting, and CG texturing for digital spaces -- as well as a more abstract awareness of architectural theory -- culminating in a long-term hands-on level design project.

PREREQUISITES:

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

COURSE STRUCTURE / FORMAT

This course meets twice a week. The lecture meeting is 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:

By the end of this course, the student will be able to:
1) Describe typical work practice in 3D level design in the game industry.
2) Demonstrate competency through finished 3D spaces with functional scripting logic.
3) Understand higher-order concerns with architecture and spatial design.
4) Demonstrate knowledge of 3D environment art and lighting workflows.

READINGS:

All course readings will be provided. However, here are some recommended books / texts:

- The Hows and Whys of Level Design, by Sjoerd De Jong
- Experiencing Architecture, by Steen Eiler Rasmussen

MATERIALS / TOOLS:

You will need the following:

- A mid-spec “gamer” (or better) laptop… an old or slow laptop won’t work, sorry
- A mouse
- Unreal Engine 4 (free)
- Autodesk Maya 2018 (free educational version via Autodesk Student website)
- Substance Designer (free student version via Substance website)

CLASS WEBSITE:

Demos, homework, notes at: https://github.com/radiatoryang/spring2018_leveldesign

ASSIGNMENTS:

- Weekly readings and short design exercises.
- Midterm project: individually, **graybox a 5-10 minute single player experience** in Unreal Engine 4, along with some setpieces / sequences scripted in Blueprint
- Final project: choose an option...
    - OPTION A: **a BFA capstone or MFA thesis** with heavy focus on level design
    - OPTION B: in groups of 1-4, **iterate and art pass** your (or someone else's) midterm single player experience into a finished prototype
- Final design statement: undergrad = 250 words, graduate = 500 words + 2 citations

SCHEDULE: (subject to change, check class wiki for more details)

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

UNIT 1, FORMAL DESIGN:

Week 1, 1/22: Introductions, what is level design / a history of level design

- read: GDC China 2012 Layout Talk (all)
- make: think of an experience goal, then sketch a bad layout and a good layout for it

Week 2, 1/29: Whiteboard challenge, parti, sketching layouts, intro to Unreal 4

- read: "How To Graybox A Level" (all) http://blog.radiator.debacle.us/2017/09/how-to-graybox-blockout-3d-video-game.html
- make: graybox 3-5 rooms / areas in UE4 using static mesh modules

Week 3, 2/05: 3D composition discussion and grayboxing in Unreal 4

- read: all of GDC China 2012 Pacing talk (all)
- make: annotate a level from a first person game: critical path, encounters, and setpieces

Week 4, 2/12: Pacing / flow discussion

- read: all of Deconstructing Favela (parts 1 and 2) http://blogs.wefrag.com/channie/2010/02/28/deconstructing-favela-part-i/
- begin midterm project: set experience goals and sketch 3 layouts (with annotations)

Week 5, 2/19: [NO CLASS ON MONDAY] Sightlines and movement discussion

- iterate midterm project: graybox an initial layout in UE4, script a first person character
- research midterm project: annotate a level from a game with similar experience goals

Week 6, 2/26: Scripting more Blueprint logic in Unreal 4, midterm playtest

- iterate midterm project: prototype mechanics, tune and modify in response to playtest

Week 7, 3/05: Scripting more Blueprint logic in Unreal 4, midterm playtest

- prepare midterm documentation, midterm deliverable due next week 3/12

UNIT 2, ENVIRONMENT ART AND NARRATIVE:

[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, working with environment art and assets in Unreal 4

- watch: GDC 2016, "Architecture in Level Design" (all)
- assemble a mood board + art pass plan + asset list for your final project

Week 10, 4/02: Review final project plans, Maya modeling techniques + intro to UVing

- read/watch: GDC 2016, "Modular Level Design of Fallout 4" (all)
- PDF https://www.slideshare.net/JoelBurgess/gdc-2016-modular-level-design-of-fallout-4
- Video: http://gdcvault.com/play/1023202/-Fallout-4-s-Modular
- make: 1 untextured 3D "hero prop" and 1 small module kit for final project

Week 11, 4/09: Module construction discussion, intro to Substance Designer

- Read "Anatomy of a Texture" and "Texturing Values for Environments" (parts 1 and 2)
- https://www.gametextures.com/the-anatomy-of-a-texture/
- https://environmentart.wordpress.com/2016/06/13/texturing-values-for-environments-part-1/
- https://environmentart.wordpress.com/2016/06/25/texturing-values-for-environments-part-2/
- make: build and/or tweak some sample Substances for final project

Week 12, 4/16: Environment texturing discussion, last Maya / Substance review

- read/watch: GDC 2018, "How To Light A Level" (all)
- make: do a lighting pass on your final project, place light fixtures and post-process

Week 13, 4/23: Lighting, mood, and atmosphere discussion

- read: all of GDC China 2012 Environmental Storytelling talk (all)
- make: sketch or assemble a scene, make us guess "what happened here"
- iterate on final project, prepare for playtest

Week 14, 4/30: Final project playtest, environmental storytelling discussion

- read all of "You Have To Pay For The Public Life" (all)
- iterate on final project

Week 15, 5/07: [NO CLASS ON WEDS] Applying architecture criticism, last playtest

- prepare annotated final project documentation for presentation
- finish final project

FINAL EXAM DAY: TBA (final presentations)

ASSESSMENT

Student projects will be graded on demonstrated process and documentation, as well as the playability, readability, clarity of construction, and visual polish. 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.

The following are the components of the grade:

Participation 30% Homework 25% Midterm 15% Final 30%

ATTENDANCE AND PARTICIPATION

- 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 PARTICIPATION grade. Three unexcused absences lower your PARTICIPATION grade more. Each subsequent unexcused absence will lower your PARTICIPATION grade further. Two tardies will count as one unexcused absence. Arriving more than 15 minutes late to class will also count as an unexcused absence.
- Participation in group discussions and critiques during class time.

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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