

NEW YORK UNIVERSITY, TISCH SCHOOL OF THE ARTS

Level Design Studio (GAMES-UT 162-001 / GAMES-GT 162-001)

Spring 2019 4 units MoWe 4:00-6:40 PM 2 Metrotech Center, room 825

INSTRUCTOR: Robert Yang <ry14@nyu.edu>, office hours: TBA

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 an awareness of architectural theory -- culminating in a long-term hands-on level design project.

PREREQUISITES:

Intermediate Game Development (Undergraduate) 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:

- 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)
- Photoshop (all Game Center students get free Adobe CC, talk to Kevin Spain)
- Notebook or sketchbook, with pencil or pen

CLASS WEBSITE: https://github.com/radiatoryang/spring2019_leveldesign

ASSIGNMENTS:

- Weekly readings (you must submit reading notes) and short design exercises.
- Midterm project: individually, **adapt a real-world location into a 5 minute single player experience** in Unreal Engine 4 with some setpieces / sequences scripted in Blueprint
- Final project: choose an option...
 - OPTION 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 UE4 experience into a finished project
- Final project deliverable:
 - undergrad = walkthrough video, and design statement 250 words + 1 citation
 - graduate = walkthrough video, and design statement 500 words + 3 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 site for updates

UNIT 1, FORMAL DESIGN:

Week 1, 1/28: Introductions, history, whiteboard challenge, parti, how to draw

- read/watch: "Reading Architecture: Column and Wall" by Erika Naginsky
- make: for 3 experience goals, sketch 5 partis + good layout + bad layout ON PAPER

Week 2, 2/04: Pinup review, intro to Unreal 4 and grayboxing

- read: GDC China 2012 Layout Talk (all)
- make: iterate on layout, graybox it in UE4 using static mesh modules + FPS Player lab

Week 3, 2/11: Layout typologies, review FPS lab UE4 blueprint (BP) + script item pickup

- read: all of GDC China 2012 Pacing talk (all)
- make: sketch 5 more partis and finish 1 layout with critical path, numbered encounters, pacing graph, and item pickups... then graybox and prototype it with items

Week 4, 2/18: [NO CLASS ON MONDAY] Playtest item levels, pacing / flow discussion

- read: Form, Space, and Order (ch 5) Circulation by Francis Ching
- begin midterm project: set experience goals and sketch 3 possible layouts ON PAPER
 - What is your unique mechanic and why? How does each layout support that?

Week 5, 2/25: Pinup review, discuss 3D composition and circulation

- research midterm project: draw a level from a game with similar goals ON PAPER
- iterate midterm project:
 - choose 1 layout, iterate + draw it again, include perspective thumbs ON PAPER
 - label which types of approach (p 243), entrance (p 251), path-space (p 278), and circulation (p 283) you are using in each layout, and be ready to justify
 - graybox VERY ROUGHLY in UE4 (no details! just mass), post screenshot

Week 6, 3/04: Pinup review, how to make a button / lightswitch via Events / Level BP

- read: Form, Space, and Order (ch 6, Classicism + Renaissance)
- iterate midterm project: prototype mechanics, tune and modify in response to pinup

Week 7, 3/11: Midterm playtest, physics trace pickups and collisions in UE4 BP

- read: Form, Space, and Order (ch 6, Modulor + Ken)
- iterate midterm project: midterm progress check-in due on 3/18

Week 8, 3/18: [NO CLASS, SPRING BREAK + GDC 3/18-3/22]

- prepare midterm documentation, midterm deliverable due on 3/25 before class

UNIT 2, ENVIRONMENT ART AND NARRATIVE:

Week 9, 3/25: Midterm debrief, working with environment art and assets in Maya + UE4

- 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>
- begin final project: moodboard + art pass plan + asset list for your final project

Week 10, 4/01: review final project plans, basic Maya modeling + triplanar texturing

- Read “Texturing Values for Environments” (parts 1 and 2)
- <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: model 1 untextured “hero prop” and 1 set of ceiling / floor / wall modules
- make: texturing pass on environment, show unlit + lit views with Photoshop histogram

Week 11, 4/08: final project playtest [ROBERT IS IN EUROPE THIS WEEK]

- iterate on final project

Week 12, 4/15: final project playtest, Maya and Photoshop 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, 4/22: final project playtest, 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, 4/29: final project playtest, environmental storytelling discussion

- iterate on final project

Week 15, 5/06: last final project playtest, class debrief

- Final project deliverables and presentation due on 5/13 (last day of class; must attend)

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 25%	Homework 25%	Midterm 15%	Final 35%
-------------------	--------------	-------------	-----------

ATTENDANCE

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 final grade. Three unexcused absences lower your final grade by a letter. Each subsequent unexcused absence will lower another letter grade. Two tardies will count as one unexcused absence. Arriving more than 15 minutes late to class will also count as an unexcused absence.

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.

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.

TITLE IX

Tisch School of the Arts is dedicated to providing its students with a learning environment that is rigorous, respectful, supportive and nurturing so that they can engage in the free exchange of ideas and commit themselves fully to the study of their discipline. To that end Tisch is committed to enforcing University policies prohibiting all forms of sexual misconduct as well as discrimination on the basis of sex and gender. Detailed information regarding these policies and the resources that are available to students through the Title IX office can be found by using the this link.

<https://www.nyu.edu/about/policies-guidelines-compliance/equal-opportunity/title9.html>