[CS-UY 4553 / CS-GY 6553] Game Design
Spring 2018

	Section A-LEC	Section B-LEC
Lectures:	Weds. 12:25 p.m. - 2:55 p.m.	Mon. 4:30 p.m. - 7:00 p.m.
Classroom:	JABS 673	JABS 775B
Instructor:	Carmine T. Guida	Ivan Safrin
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Office Hours:	TBA	After each class

Objectives: This course is about experimental, minimal game design. Minimalism in this context pertains to every aspect of the game, and these can be broadly characterized as the game system, control, visuals, audio, and resulting theme. We will explore these aspects through the creation of a few very focused (video)game prototypes using a variety of engines and frameworks such as Unity, GameMaker, Processing, and others. This will allow us to obtain a better understanding of what makes games appealing, and how game mechanics, systems, audiovisuals, and a variety of player experiences can be designed and iteratively improved by means of rapid prototyping and play-testing. The course is a combination of the technology, design, and philosophy underlying contemporary game creation in the small, as well as the real-world implementation and design challenges faced by practicing game designers. Students will learn design practices and principles by which minimal games can be conceived, prototyped, and fully developed within a one-semester course, and will create a minimal video game from start to finish. The course is a lot of (team)work, but it's also a lot of fun. Basic programming skills are required. Artistic skills, or a willingness to learn them are a plus.

Outline: An introduction to minimalist game design: abstraction, prototyping, systems and feedback loops, input and control, space-time discretization, minimal graphic design, game feel, design patterns, human perception, game programming, etc. Each student will design and implement 3-5 videogame prototypes within the first 7 weeks (prototype phase), followed by a development cycle of 7 weeks, in which teams of 4 students will fully develop one of the prototypes to finished, complete game (production phase). For the prototype phase, each student will design every aspect of the game (system, control, visuals, audio), while the production phase will see each team member focusing on a specific aspect of the game, while still contributing to the big picture. Each class meeting will consist of a lecture, followed by student presentations, critique, and class discussion.

Prerequisites: Interactive Computer Graphics, Artificial Intelligence, or Introduction to Game Programming for CS students. Instructor permission required otherwise.

Expected Work: Students will design, implement, play-test, and present at least 3 prototypes and one large game project. In which way these are implemented (i.e. using different game engines) is up to the student(s), and it is possible to try different means of implementation for different prototypes. Each of the prototypes as well as the large project will be presented by the student or team in class. It is expected that each class participant set aside 1-2 full days per week (outside of class) to work on their games.

Exams: There will be a final presentation by each team (including each team member) on the design and development of the large project. Aside of the final game, each team is expected to hand in a 2-page post-mortem document prior to the final presentation.

Readings: We will discuss articles on (minimalist) game design, game feel, game theory, and systems theory, as well as analyze a variety of videogames such as Getting Over It, Desert Golfing, Spelltower, Super Hexagon, Spelunky, Osmos, Canabalt, Flappy Bird, Tetris, etc. A playing and reading list will be provided throughout the semester.

Grading Distribution: Prototypes: 45%, Large Project: 45%, Class Participation: 10%.

General Policy: To ensure a quality course for all participants, presence at the weekly class meetings is mandatory, unless otherwise stated.

Tentative Schedule: Weekly lectures will be adjusted according to the current design topic most relevant to the student projects. Topics include prototyping, visual abstraction, game feel, systems design, feedback loops, strategy and dexterity, uncertainty and luck, physics-based control and animation, game complexity, design patterns, accessibility and human perception, semiology of graphics, game difficulty and balance, sources of creativity, AI methods and procedural content generation (PCG), characteristics of games, and interaction design (lecture in italics, homework and presentation in boldface, subject to change)

#	Sec A	Sec B	Topic
1	01/30	01/28	Introductory lecture; **Prototype 0 assigned**
2	02/06	02/04	Lecture; **Prototype 0 presentation, prototype 1 assigned**
3	02/13	02/11	Lecture; **Prototype 1 presentation, prototype 2 assigned**
4	02/20	02/18	Lecture; **Prototype 2 presentation, prototype 3 assigned**
5	02/27	02/25	Lecture; **Prototype 3 presentation, prototype 4 assigned**
6	03/06	03/04	Lecture; **Prototype 4 presentation, Prototype 5 assigned**
7	03/13	03/11	Lecture; **Prototype 5 presentation + final prototype pitches**
8	03/27	03/25	Lecture; **Voting + team formation, team presentation 1**
9	04/03	04/01	Lecture; **Team presentation 1, team presentation 2 assigned**
10	04/10	04/08	Lecture; **Team presentation 2, team presentation 3 assigned**
11	04/17	04/15	Lecture; **Team presentation 3, team presentation 4 assigned**
12	04/24	04/22	Lecture; **Team presentation 4, team presentation 5 assigned**
13	05/01	04/29	Lecture; **Team presentation 5, final presentation assigned**
14	05/08	05/06	**Presentation of final games**

Statement of Academic Integrity: For the institute policy on academic dishonesty, see http://engineering.nyu.edu/life/student-affairs/code-of-conduct.

Students with disabilities: If you are student with a disability who is requesting accommodations, please contact New York Universitys Moses Center for Students with Disabilities at 212-998-4980 or mosescsd@nyu.edu. You must be registered with CSD to receive accommodations. Information about the Moses Center can be found at www.nyu.edu/csd. The Moses Center is located at 726 Broadway on the 2nd floor. 2