

What is more fun than playing a game? Design a game!



Course Title: Game Design

Course Number: CPSC 4820-003; CPSC 6820-003

Term: Fall 2019 (August 21 – December 13)

Location: McAdams 114

Days/Times: Monday/Wednesday 2:30 pm – 3:45 pm

Instructor: Dr. Guo Freeman, Assistant Professor, School of Computing – Human Centered Computing

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Instructor Office Hours: By appointment via emails

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Course description

The gaming industry has come a long way since its humble beginnings more than thirty years ago. From a time when people were thrilled to see a square white block and two rectangular paddles on the screen to today, where gamers explore realistic three-dimensional worlds in high resolution with surround sound, the experience of being a gamer has changed radically. The experience of being a game *designer* has changed even more. In this course, students learn principles of game design and social impacts of games through play assignments, in-class teamwork, and group game design

exercises. Students are introduced to psychology and design theories as they relate to game design, and finish the semester by writing a design document for a game and using digital prototype tools to demo the game.

Students will form small teams (3 to 5 people per team) early in the semester, collectively pitch a game idea to the instructor and to the class, and design the game as a team-based semester-long project. Classes will include a mix of lectures, readings, in-class teamwork, and student presentations/demos of their projects.

Learning Outcomes

By the end of the course, students will be able to design elements of a game and apply the skills needed to formulate novel game concepts. This will involve:

- 1) explain the fact that games are not simply software applications but focus on player experience
- 2) build a solid knowledge on why gameplay and fun is the core of any games other than anything else
- 3) conduct game design practices as craftsmanship that involves imagining a game, defining how it works, describing the elements that make up that game and successfully communicating or documenting that information to a team, or even themselves, for development.
- 4) demonstrate necessary business and management skills for their future workplace, including examining business aspects of the gaming industry that impact design and development, including demographics, economic models, budgets, publishing, and marketing
- 5) practice using digital prototype tools to visualize and demonstrate their game ideas.

Textbook

T. Fullerton, *Game Design Workshop*, 3rd edition, CRC Press, Taylor & Francis Group, 2014, ISBN 978-1-4822-1716-2.

Prerequisites

CPSC 2150 and junior standing

Course Requirements

For both undergraduates (students who enroll in 4820) and graduate students (students who enroll in 6820), completing required readings, attending classes, actively participating in class discussions, and finishing course projects and presentations on time are essential to doing well in this course. **However, undergraduates' and graduate students' grades will be based on different criteria.**

For undergraduates (students who enroll in 4820):

1. Participation (individual, 15%)

This includes completing required readings and attending classes. This also includes active participation in class discussions (e.g., provide feedback and critiques for others' presentations). This is an individual task. **If you miss the class with no explanation more than twice, you will lose all the participation points.**

2. Play assignments and presentations (Individual, 10%*3)

This includes completing three play assignments. You are to reflect on your own play experience and/or investigate design concepts of an existing game. You will present your play assignments in class (at most 5 mins). This is an individual task.

3. Team game design project (team, 55%)

This project is a team effort to design a digital game. Your decision on game ideas can be quite open and creative. There is no limitation on what genre of games you are expected to design. Note that it is possible to succeed in this course, even if the game your team designs has serious flaws. Teams are encouraged to take risks with their approach to gaming!

There are six deliverables for the team game design projects:

- Game idea pitch presentation (10%)
- Early-stage design demo (10%)
- Playable prototype demo (10%)
- "Kickstarter" final presentation (10%)
- Game design document (10%)
- Retrospective (individual, 5%)

Each team will be expected to keep an ongoing process log, updated at least weekly with their progress and shared with the instructor. The instructor will provide a template of the process log. Teams will be expected to offer informed and incisive critique of other teams' games, process and assessment plans.

Game idea pitch presentation

Your team needs to develop a game idea to a degree that you all can agree on it. The game idea should outline the goal of the game and roughly how it will work. This description need not be much more than the genre or key mechanisms that are to be used. The goal is to distinguish at the rough level of whether you are designing an RPG, a first person shooter, a puzzle-solving game, or something else. You do not need to be too specific in terms of genre, because these classifications are not necessarily beneficial and sometimes can constrain your design activities.

In addition, to assure that you have a solid collaboration plan in place, you need the following:

- the roles that each team member will play and the division of labor

- the assets (e.g., graphics) that are required for the game design and how you will obtain them
- project plan -- that is a schedule

Your team needs to present your game idea (about 5-8 minutes, depending on the number of teams) to the class.

Early stage design demo

As your task is to create preliminary playable experience, you will need to incorporate aspects from each of the team members. This isn't a completed game design, but it should shed light on the essentials of your game. Your team presentation should both demo (prototype) the preliminary game design and address the following questions:

- What are the objectives of the game?
- How does the game flow?
- What is the overall structure of the game elements?
- What is the game world?
- If there is a combat system, what is it?
- What are the key objects and actions of the game?

Your team needs to present your game idea (about 5-8 minutes, depending on the number of teams) to the class.

Playable prototype demo

This demo should be your team's attempt at the complete gameplay experience. There may be a few gaps and the features may not be final, but the design for player experience, game dynamic and user interface should be complete.

Your team presentation (about 5-8 minutes, depending on the number of teams) should demo the playable prototype of your game, summarize remaining issues, and explain your plans to fix those issues in the next step.

Final presentation

It is to present the rationale behind the game design and show off the game idea. It should talk about the vision of the game. The intention of this presentation is to interest people enough that they would help you develop it (hence the "kickstarter" in the title). This presentation should be no longer than 8 minutes plus 4 min Q&A with the audience.

Game Design Document

The final design document needs to follow the outline provided in the template. The template will be posted on Canvas. Of course, you can skip some items if they are not applicable for your game. Each team needs to submit their game design document as a WORD document via Canvas by the end of Wednesday, 12/11.

Retrospective

Each student is to submit his/her retrospective as a WORD document via Canvas by the end of Wednesday, 12/11. These are confidential evaluations and will not be shared with your teammates.

The retrospective will include the followings:

1. Overall team evaluation. How did the team work as a whole? What worked well and what didn't? How was the work divided? Did the division work well?
2. Individual assessments of each team member, including yourself. The assessment should cover
 - Design and analytical ability
 - Design and analytical contribution
 - Organizational skill
 - Team participation

This evaluation will be both narrative and numeric. You are to assign a numeric value between 1 and 5 to each individual on each of these four categories. (1 is worst and 5 is best.) The narrative should justify the ranking and address the following points:

- Describe what tasks were assigned to the person and how they executed those assignments.
- Did they help others?
- Did they contribute?
- Did they need a lot of guidance or were they self-starting?

Grading policy

90% ~ A

80% ~ 89% B

70% ~ 79% C

60% ~ 69% D

Under 60% F

Or, you could read the grades as:

A = Excellent (Wow!)

B = Good (Hmmm, Not bad, shows potential)

C = Average (Meh, it'll pass but....)

D = Below Average (Really?)

F = Fail (What are you doing here?)

For graduate students (students who enroll in 6820):

1. Participation (individual, 15%)

This includes completing required readings and attending classes. This also includes active participation in class discussions (e.g., provide feedback and critiques for others' presentations). This is an individual task. **If you miss the class with no explanation more than twice, you will lose all the participation points.**

2. Team game design project (team, 55%)

This project is a team effort to design a digital game. Your decision on game ideas can be quite open and creative. There is no limitation on what genre of games you are expected to design. Note that it is possible to succeed in this course, even if the game your team designs has serious flaws. Teams are encouraged to take risks with their approach to gaming!

There are six deliverables for the team game design projects (see the undergraduate section for details)

- Game idea pitch presentation (10%)
- Early-stage design demo (10%)
- Playable prototype demo (10%)
- "Kickstarter" final presentation (10%)
- Game design document (10%)
- Retrospective (individual, 5%)

Each team will be expected to keep an ongoing process log, updated at least weekly with their progress and shared with the instructor. Teams will be expected to offer informed and incisive critique of other teams' games, process and assessment plans.

3. Submission aiming at the 2020 ACM CHI Student Game Design Competition (team, 30%)

Your team will prepare a submission aiming at the **2020 ACM CHI Student Game Design Competition** (<https://chi2020.acm.org/authors/student-game-competition/>). The ACM CHI Conference on Human Factors in Computing Systems is the premier international conference of Human-Computer Interaction. The Student Game competition is aimed at providing an opportunity for students from a variety of backgrounds (HCI, computer science, game design, fine arts, etc.) to participate in CHI and demonstrate their game design and development skills in an international competition. Furthermore, the competition provides CHI attendees with engaging and playable exemplar games that showcase emerging student talent and inspire future work.

Your submission will be due by the end of Wednesday, 12/11. It should include:

- **A paper in the ACM extended abstract format (15%):** Student should submit a non-anonymized paper (up to 6 pages) written in the ACM Extended Abstracts Format. This paper should include:
 - An overview of the game itself, and the design and development process, with possibly screenshots/images of play.
 - The positioning of the game in terms of related work, including references and outlining the game's unique contribution.
- **A demonstration of the game (this can also be used in your team's "Kickstarter" final presentation) (10%):** This should take the form of a 4-minute maximum gameplay video clearly showing both the screen (if present) and the player interacting with the game. If the game is not yet fully complete, students could also submit a Wizard of Oz implementation of the game with justification on why the game is incomplete (e.g., technology is not yet there, needs massive resources).
- **A brief video 'trailer' (this can also be used in your team's "Kickstarter" final presentation) (5%)** that gives an overview of the game (2 minutes maximum).

Important notes:

1. This assignment is part of the course requirements. You do NOT have to actually make the official submission to CHI unless you feel confident/comfortable to do so. The official submission deadline is Jan 6, 2020, 12 pm PST. Please make sure to discuss with me if you do decide to submit to the actual competition. I will provide extra help for finalizing your submission. If your submission is accepted, it will be published and included in the CHI proceedings (Extended Abstracts); if your game is chosen as one of the five finalists, your team will be invited to attend and demo your game at CHI2020 in Honolulu, Hawaii.
2. If you are in a graduate student only team, all team members should contribute to preparing this submission and be co-authors on the paper.
3. If you are in an undergraduate-graduate student mixed team, the graduate students should take lead on and be responsible of preparing this submission; undergraduate students are welcome to contribute as much as they want (if so, they should be co-authors or acknowledged, and receive extra course credit).
4. This assignment is not required for undergraduate-only team. But they are also welcome to submit to the competition if they want (if so, they will receive extra course credit). Please make sure to discuss with me if you do decide to submit to the actual competition. I will provide extra help for finalizing your submission.

Grading policy

93% ~	A
90% ~ 93%	A-
85% ~ 89%	B+
80% ~ 84%	B
75% ~ 79%	B-
70% ~ 74%	C+
65% ~ 69%	C
60% ~ 64%	C-
Under 60%	F

Or, you could read the grades as:

A and A- = Excellent (Wow!)

B+ and B = Good (Hmmmm, Not bad, shows potential)

B- = Average (Meh, it'll pass but....)

C+, C, and C- = Below Average (Really?)

F = Fail (What are you doing here?)

Collaboration Policy

All members of the team are expected to participate equally in the work of game design, writing, and presentations. Collaborate as much as you like, or split the work up if you prefer; you can't go wrong! However, groups should be cautious of borrowing their game mechanics too closely from familiar games. Just as a writing class wouldn't let you copy from Hemingway, this class discourages games that are too similar to existing games such as Scrabble or other popular pastimes. Don't worry, though – I'll let you know if your game is inadvertently plagiarizing in plenty of time to revise it! Additionally, if your team draws on resources not available to the rest of the class, such as working with other students who are not taking the course, you should clear it with me beforehand and acknowledge your peer in your submission(s).

Attendance Policy

The academic resources of Clemson University are provided for the intellectual growth and development of students. Class attendance is critical to the educational process; therefore, you should attend scheduled courses regularly if you are to attain your academic goals. In the event of an emergency, you should make direct contact with me,

preferably before a class or an assignment due. You should discuss with me regarding any scheduled absence as soon as possible and develop a plan for any make-up work. It is the your responsibility to secure documentation of emergencies, if required. **If you miss the class with no explanation more than twice, you will lose all the participation points.** A student with an excessive number of absences may be withdrawn at the discretion of the course instructor.

Any assignment that was scheduled at the time of a class cancellation due to inclement weather will be given at the next class meeting unless contacted by the instructor. Any assignments due at the time of a class cancellation due to inclement weather will be due at the next class meeting unless contacted by the instructor. Any extension or postponement of assignments or exams must be granted by the instructor via email or Canvas within 24 hours of the weather related cancellation.

Notification of Absence

Because privacy regulations stipulate that faculty and staff communicate with students through authorized University channels, use your University email account or Canvas's messaging system to contact me.

Canvas allows you as a student to quickly notify instructors of an absence from class and provides set categories (e.g. court attendance, illness, family illness or death, military duty, hospitalization, university function, religious observance). The notification form requires a brief explanation, dates and times. This does not serve as an excuse from class but allows you to communicate with instructors (all or some, of their choice). Consult with instructors when discussing absences. The Dean of Students' office can also be of assistance.

Email Policy/Response Time

You can expect a response to your email inquiries within 48 hours, excluding weekends and university holidays.

Late Work policy

For in-class presentations, no lateness is allowed. You are expected to share your play experience with your classmates or your team is expected to present your game to the class on the due day. If you or your team cannot make an in-class deadline, you may contact me in advance to discuss alternatives or you will receive a grade of zero for that assignment.

For game design document, your team retrospective, and the CHI game design competition submission, you must contact me in advance if your team wishes an extension. I can be flexible with many of the written deadlines, but only if you speak to me beforehand. If you do not obtain an extension, the late assignment will be penalized by a third of a grade for every day that it remains overdue.

Academic Integrity Statement

As members of the Clemson University community, we have inherited Thomas Green Clemson's vision of this institution as a "high seminary of learning." Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form.

Accessibility Statement

Clemson University values the diversity of our student body as a strength and a critical component of our dynamic community. Students with disabilities or temporary injuries/conditions may require accommodations due to barriers in the structure of facilities, course design, technology used for curricular purposes, or other campus resources. Students who experience a barrier to full access to this class should let the professor know, and make an appointment to meet with a staff member in Student Accessibility Services as soon as possible. You can make an appointment by calling 864-656-6848, by emailing studentaccess@lists.clemson.edu, or by visiting Suite 239 in the Academic Success Center building. Appointments are strongly encouraged – drop-ins will be seen if possible, but there could be a significant wait due to scheduled appointments. Students who receive Academic Access Letters are strongly encouraged to request, obtain and present these to their professors as early in the semester as possible so that accommodations can be made in a timely manner. It is the student's responsibility to follow this process each semester. You can access further information here: <http://www.clemson.edu/campus-life/campus-services/sds/>.

Title IX statement

Clemson University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, religion, sex, sexual orientation, gender, pregnancy, national origin, age, disability, veteran's status, genetic information or protected activity in employment, educational programs and activities, admissions and financial aid. This includes a prohibition against sexual harassment and sexual violence as mandated by Title IX of the Education Amendments of 1972. This policy is located at <http://www.clemson.edu/campus-life/campus-services/access/title-ix/>. Ms. Alesia Smith is the Clemson University Title IX Coordinator, and the Executive Director of Equity Compliance. Her office is located at 110 Holtzendorff Hall, 864.656.3181 (voice) or 864.656.0899 (TDD).

Copyright

All materials found in this course are strictly for the use of students enrolled in this course and for purposes associated with this course; they may not be retained or further disseminated. Clemson students, faculty, and staff are expected to comply fully with institutional copyright policy as well as all other copyright laws.

Privacy Policy

This course is designed with your privacy in mind. If, however, you feel that an assignment or technology tool undermines your right to privacy, please contact me immediately. We will work together to determine an alternative assignment that will help you achieve the course learning outcomes.

Tentative Schedule of Readings and Topics

(Subject to change with advance notice)

Date	Topic	Readings	Due
8/21 Wednesday	Introduction and overview of the course	Syllabus	
Brawler (Designing the process)			
8/26 Monday	Explore types of computer games and players	<p>1. Video Game History: http://www.history.com/topics/history-of-video-games</p> <p>2. Video games timeline: https://www.infoplease.com/spot/timeline-video-games</p> <p>3. Bartle, R. (1996). Hearts, clubs, diamonds, spades: Players who suit MUDs. <i>Journal of MUD research</i>, 1(1), 19. http://mud.co.uk/richard/hcds.htm</p>	
8/28 Wednesday	How games motivate players: Psychology of gaming	<p>1. Yee, N. (2006). Motivations for play in online games. <i>CyberPsychology & behavior</i>, 9(6), 772-775.</p> <p>2. Sjöblom, M., & Hamari, J. (2017). Why do people watch others play video games? An empirical study on the motivations of Twitch users. <i>Computers in Human Behavior</i>, 75, 985-996.</p>	

9/2 Monday	Individual presentations		Undergraduates only: Categorization of games
9/4 Wednesday	Phases of game development; prototype and design document	ch. 7 Prototyping; ch. 8 Digital prototyping; ch. 13 and 14	
9/9 Monday	Individual presentations		Undergraduate only: Mapping your gameplay
9/11 Wednesday	Where games come from: Conceptualization and system design	Ch. 5 and 6	
9/16 Monday	Individual presentations		Undergraduates only: Share your play experience
Warrior (Designing the game world)			
9/18 Wednesday	Rules and mechanics	Ch. 3	
9/23 Monday	Teamwork		Form your team (3 to 5 people per team) and work on your game!
9/25 Wednesday	Characters	<p>1. Ch. 4: Character, Fullerton (2014): pp. 108-112</p> <p>2. Magerko, B., Laird, J., Assanie, M., Kerfoot, A., & Stokes, D. (2004). AI characters and directors for interactive computer games. In <i>Proceedings of the Sixteenth Innovative Applications of Artificial Intelligence Conference</i> (pp. 877–884), AAAI Press.</p>	
9/30 Monday	Teamwork		Work on your game!
10/2 Wednesday	Levels	1. Sorenson, N., & Pasquier, P. (2010). Towards a generic framework for automated video game level creation. In	

		Applications of Evolutionary Computation (pp. 131-140). Springer Berlin Heidelberg.	
10/7 Monday	Team presentations		Game idea pitch
Veteran (Designing the player experience)			
10/9 Wednesday	Gameplay	<p>1. "Challenge" and "Play" in ch. 4, Fullerton (2014), pp. 97-104</p> <p>2. "Fun" in ch. 11, Fullerton (2014), pp. 341-368</p>	
10/14 Monday	NO CLASS – FALL BREAK		
10/16 Wednesday	Narratives and storytelling	1. "Premise," "Story," "World building," and "The dramatic Arc" in Ch. 4 (Fullerton, 2014), pp. 105-120	
10/21 Monday	Teamwork		Work on your game!
10/24 Wednesday	Design interface and audio	<p>1. Alofs, T., Theune, M., & Swartjes, I. (2011). A tabletop board game interface for multi-user interaction with a storytelling system. In Intelligent Technologies for Interactive Entertainment (pp. 123-128). Springer Berlin Heidelberg.</p> <p>2. Juan, C., Toffetti, G., Abad, F., & Cano, J. (2010, July). Tangible cubes used as the user interface in an augmented reality game for edutainment. In Advanced Learning Technologies (ICALT), 2010 IEEE 10th International Conference on (pp. 599-603). IEEE. [PDF]</p>	

		<p>3. VR interface design pre-visualization methods: https://www.youtube.com/watch?v=id86HeV-Vb8</p> <p>4. Paterson, N., Naliuka, K., Jensen, S. K., Carrigy, T., Haahr, M., & Conway, F. (2010, September). Design, implementation and evaluation of audio for a location aware augmented reality game. In Proceedings of the 3rd International Conference on Fun and Games (pp. 149-156). ACM.</p>	
10/28 Monday	Team presentations		Early-stage design demo
10/30 Wednesday	Design for accessibility	<p>1. Game accessibility guidelines: http://gameaccessibilityguidelines.com/full-list/</p> <p>2. Porter, J. R., & Kientz, J. A. (2013, October). An empirical study of issues and barriers to mainstream video game accessibility. In Proceedings of the 15th international ACM SIGACCESS conference on computers and accessibility (p. 3). ACM.</p>	
Destroyer (Gaming industry as an ecosystem)			
11/4 Monday	Teamwork		
11/6	Design for the future	1. Designing for VR:	

Wednesday		https://blog.prototypr.io/designing-for-vr-a-beginners-guide-d2fe37902146 2. How Will VR Change Game Design in The Future? https://www.gamedesigning.org/gaming/vr-change-game-design/ 3. The possibilities and challenges of designing AR games, by a HoloLens developer: https://www.digitalartsonline.co.uk/features/interactive-design/possibilities-challenges-of-designing-ar-games-by-hololens-developer/	
11/11 and 11/13: NO CLASS. GUO ATTENDING CONFERNECE			
11/18 Monday	Team presentations		Playable prototype demo
11/20 Wednesday	Understand the gaming ecosystem and gaming industry	Ch. 15	
11/25 Monday	Teamwork		Work on your game!
11/27: NO CLASS. HAPPY THANKSGIVING!			
12/2 Monday	Final presentations		
12/4 Wednesday	Final presentations		Game design document, teamwork Retrospective, and submission to the CHI student game design competition due: End of Wednesday, December 11