CI 437: Educational Game Design

Department of Curriculum & Instruction
UIUC College of Education

I. Basic Course Information

Semester:	Spring 2015	**Class Location:**	Education Bldg #42A 1310 S. 6th St.
Course Meeting Days:	Tues & Thurs	**Undergrad / Grad Credits:**	3 / 4
Course Meeting Hours:	2:00 – 3:20 PM		

II. Instructor Information

Instructor:	Robb Lindgren	**Office Address:**	Education Bldg #394 1310 S. 6th St.
Email Address:	robblind@illinois.edu		
Office Hours:	Mondays 2-4	**Office Phone:**	217-244-3655

III. Course Description

This course examines the role that physical and digital games can play in education as a means to engage students and help them learn a range of topics in a variety of settings. Using ideas from both curriculum design and game design, students in this class will work in teams to create original games with the goal of acquiring new concepts and skills. The course will mix instructor lectures and class discussion with small group activities. Students will examine games from various viewpoints in order to understand the most effective ways to deliver instructional content. The course will survey and sample many types of educational games (e.g., serious games, games for impact, persuasive games) and in many formats (e.g., console games, online games, board games).

IV. Course Objectives

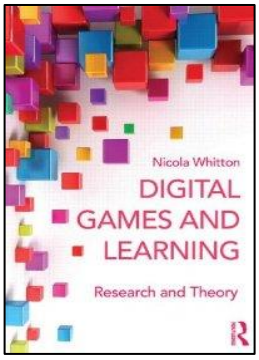
- To understand the basic principles of game design and how they can be applied to games with an educational goal
- To understand basic theories of learning, interactivity, and play in the context of game design
- To critique existing game designs and assess their ability to achieve specified educational outcomes
- To be familiar with contemporary game prototyping and development tools
- To work in a team to design, prototype, and evaluate original game designs with clear educational objectives

V. Prerequisites

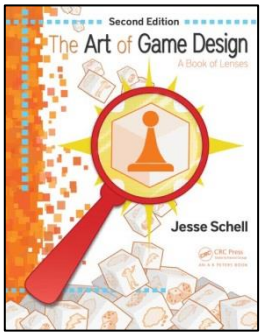
Students should have junior standing or consent of the instructor. Prior experience with game or web development tools may be helpful, but are not required.

VI. Textbooks

There are two required texts for the course listed below. One is a book about how games can promote learning from an educational perspective; the other is a more general book about effective game design practices and principles. Any supplemental readings will be provided by the instructor on Canvas.



Whitton, N. (2014). *Digital Games and Learning: Research and Theory*. Routledge.



Schell, J. (2014). *The Art of Game Design: A book of lenses*. 2nd Edition. CRC Press.

VII. Grading Policy

Assignment/Activity	Points	Percent of Final Grade
Educational Game Breakdown	75	15%
Physical Game Design		
Student Report/Reflections	50	10%
Group Final Design	100	20%
Digital Game Design		
Student Report/Reflections	50	10%
Group Final Design	100	20%
Concept Quizzes (3)	75	15%
Participation (Discussion, Misc. In-Class Activities)	50	10%
Totals	**500**	**100%**

You and your project partners are welcome to come speak with me during my office hours about any questions regarding grading; however, you must do so within 1 week of a grade being posted.

Letter grades will be assigned based on the percentage of total points earned for the course.

Grading Scale (%)	
94-100	A
90-93	A-
87-89	B+
84-86	B
80-83	B-
77-79	C+
74-76	C
70-73	C-
67-69	D+
64-66	D
60-63	D-
0 - 59	F

VIII. Assignments, Projects, and Quizzes

Educational Game Breakdown *(15%)*
Each week, starting in Week 3, we will take an existing game, physical or digital, and critically analyze its ability to achieve educational outcomes. A group of ~3 students will lead the discussion and demonstration of the game. To the extent possible the student team will engage the rest of the class in gameplay, or some other activity to present the features of the game and how they contribute to learning. If there is research or other forms of analysis on this particular game (e.g., a magazine article), these can be part of the presentation. The selected game should coincide with the course weekly theme if possible. Students will work with the instructor ***at least a week in advance*** to select the game and purchase if necessary. Groups should plan for the breakdown activities to last about 30-40 minutes.

Physical Game Design *(10% Ind. Report + 20% Group Design)*
There are many kinds of games that do not involve digital technologies that can promote learning. Card games can be used to teach math and logical reasoning concepts. Board games can be used to teach ideas in the humanities and the sciences. Even puzzles and movement/sports games can be structured to teach concepts in physics, environmental sciences, economics, psychology, etc. For this assignment, you and a team of ~3 other students will be designing an original physical game. You will be authoring a game design document which explains your game and its major features. Your game should be fun and engaging while also addressing specified learning goals. Your group will create a prototype of the physical game, conduct playtesting sessions, and assess the game's ability to achieve your group's stated learning goal. 100 pts (20%) will be allocated towards the

quality of the game design and the group's evaluation of their game. 50 pts (10%) will be allocated for a short individual report that describes the individual's role in the project and their personal assessment of the game and group process.
Due Date: *March 17th, 2015*

Group Digital Game Design *(10% Ind. Report + 20% Group Design)*
Many of the games that children and adults play today are digital games. These are played on computers, game consoles such as the Xbox or Wii, and on personal digital devices such as phones and tablets. These games have many different formats and styles, but they also share much in common in terms of basic game mechanics, character development, narrative structure, etc. As we will discuss in class, these games have high potential for helping people learn new things, but the design of educational games must be carried out deliberately and must be open to frequent evaluation as to whether they are truly meeting their educational goals. For this assignment, you and a team of ~3 other students will be designing an original digital game. You will be authoring a game design document which explains your game and its major features. Your game should be fun and engaging while also addressing specified learning goals. You will create a prototype of the digital game using an appropriate and available platform (Scratch, Flash, iOS, Unity, etc.), conduct playtesting sessions, and assess your game's ability to achieve your learning goal. 100 pts (20%) will be allocated towards the quality of the game design and the group's evaluation of their game. 50 pts (10%) will be allocated for a short individual report that describes the individual's role in the project and their personal assessment of the game and group process.
Due Date: *May 12th, 2015*

Concept Quizzes (3) *(15%)*
In order to ensure the main game design concepts/principles and relevant research findings are being understood, we will have 3 quizzes throughout the semester. These quizzes will include multiple choice and short-answer questions coming from material in the assigned readings, lecture slides, and in-class activities. The quizzes will be taken in class and will assess topics covered in the previous third of the course. Each quiz will be worth 25 pts (5%).
Date: *March 3rd, April 7th, May 5th 2015*

Participation *(10%)*
50 pts in the course (10%) will be allocated for participation in class discussion, providing useful resources and answering questions for other students, participating in group game pitches and other small group activities.

Graduate Student Work: Graduate students taking the course will generally be grouped together for the project teams. For graduate students the report that accompanies the two game designs must include a 4-page review of the relevant research literature and descriptions of studies with findings that support the design decisions of the project team. This research report is in addition to the project and report requirements for undergraduate students.

IX. Late Work

Assignments must be turned in by class time on the date they are due. In general late work is not accepted so make sure you have backed up all your work (e.g., Box, Dropbox, or some other cloud solution) and start your assignments early. Because you will be working in groups it is important that you communicate with your group about any circumstances in your life that will affect your participation.

If you do experience a personal emergency that hinders your ability to do the work in this class, please notify me *and your project group* as soon as possible. It will be difficult for me to make accommodations for you if you wait to tell me about these events until the end of the course.

X. Attendance and Participation

Students are expected to show up to class on time and be prepared to participate in class discussions. Two unexcused absences are allowed per semester—you can miss class two times without having to give me a reason and without penalty. Up to two additional absences will be permitted for appropriate reasons (illness, family emergencies) *if you notify me of your absence ahead of time* (email me to tell me that you will be absent and why). Every absence in excess of two unexcused absences will result in a 10 point (2%) reduction. I will take roll at the beginning of class, so if you are late it is your responsibility to make sure that you are not marked absent for the day. If you are excessively late (e.g., you've missed half the class), I will mark you absent.

Finally, please be respectful of other students in the class and the instructor by putting your **cell phones on silent and muting your laptops**. Laptops will be allowed for note-taking purposes and project group work, but there may be certain days and activities for which I'll ask people to put their laptops away.

Readings: I will make the assumption that everyone is making a reasonable effort to keep up with the readings. This is important because it makes class discussions more interesting and valuable (and because you don't want to have to read an entire book the night before quiz).

XI. Technology

We will be using Canvas as the course management tool for this semester. You will need to create a user account for Canvas and join the course. More details on this will be discussed in class.

Students are required to have access to word processing software. It is also recommended that students have access to some type of videogame console, handheld gaming system, or PC gaming environment (phones are becoming fairly common gaming environments, but it would still be good to have access to one of the previously mentioned systems). It is expected that students of this class will use technology during class to take notes, experiment (during appropriate class discussions), show examples, etc. It is also expected that these technologies will not be used during class for purposes outside the scope of the course.

When sending me email, please include the course prefix and course number in the subject line of your email. For example, for this course your subject line should include "CI437" in all email you send me regarding this class or assigned coursework.

No recording devices are allowed without explicit written consent from the instructor.

XII. Academic Integrity

Please refer to the Illinois Student Code Article 1, Part 4 for the statement on Academic Integrity at the following URL: http://www.admin.uiuc.edu/policy/code/

Academic dishonesty may result in a failing grade. Every student is expected to review and abide by the Academic Integrity Policy. Please note that you are responsible for reading this policy. Ignorance is not an excuse for any academic dishonesty.

XIII. Students with Disabilities

To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the Disability Resources and Educational Services (DRES) as soon as possible. To contact DRES you may visit 1207 S. Oak St., Champaign, call 333-4603 (V/TDD), or e-mail a message to disability@uiuc.edu.

To insure that disability-related concerns are properly addressed from the beginning, students with disabilities who require assistance to participate in this class are asked to see the instructor as soon as possible. If you need accommodations for any sort of disability, please speak to me after class, or make an appointment to see me, or see me during my office hours.

XIV. Course Schedule (tentative)

The class schedule may change at any time. I will make any announcements regarding changes to our schedule in class. Major deadlines and presentation dates are noted. If you miss a class, contact a classmate for notes.

In general Tuesdays will be dedicated to a discussion of game design principles and related research. Most of our discussion of readings will take place on Tuesdays. On Thursdays we will have the Educational Game Breakdowns, small group activities, and project work time.

Week	Topic	Assignments / Activities/Notes
1 Jan 20 & 22	Course Introduction	
2 Jan 27 & 29	Play	****No class 1/27**
3 Feb 3 & 5	Games and Interactivity	Educational Game Breakdowns begin (Thurs)
4 Feb 10 & 12	Games and Learning	
5 Feb 17 & 19	Understanding the Player	
6	Game Design Documents	

Feb 24 & 26		
7 Mar 3 & 5	Specifying Game Mechanics	Concept Quiz 1 (Tues)
8 Mar 10 & 12	Specifying Learning Content	
9 Mar 17 & 19	Physical Game Presentations	Student presentations
10 Mar 24 & 26	**Spring Break	
11 Mar 31 & Apr 2	Narrative, Characters, and Identities in Games	
12 Apr 7 & 9	Multiplayer Interactions & Game Communities	Concept Quiz 2 (Tues)
13 Apr 14 & 16	Playtesting and Assessing Games Part 1	
14 Apr 21 & 23	Playtesting and Assessing Games Part 2	
15 Apr 28 & 30	*Serious Games, Games for Impact, Persuasive Games*	
16 May 5 & 7	New Gaming Format	Concept Quiz 3 (Tues)
17 Final Exam Week	Digital Game Presentations	Student presentations