COMP 585H: Serious Games

Bulletin Description
Concepts of computer game development and their application beyond entertainment to fields such as education, health, and business. Course includes team development of a game.

General Course Info
Term: TERM SPRING 2018
Department: COMP
Course Number: 585H
Time: MW 3:35-4:50
Location: FB141
Website: http://www.cs.unc.edu/Courses/comp585-s18

Instructor Info
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Office Hours: Open Door Policy

Textbooks and Resources
There are no required or recommended textbooks. All recommended or required readings will be available or referenced on the class website. The website is at http://cs.unc.edu/Courses/comp585-s18. This is considered the primary source of information though class announcements take precedence and may take time to be reflected on the website.

Sakai will be used for the submission of assignments and the returning of comments and grades.

Game development will use freely available software that the student will be expected to download.

Course Description
Serious Games are training, learning, or propaganda games used in schools, medicine, the military, companies, and the public service sector. The premise behind studying serious games is three-fold:
• First, games are a legitimate artistic media and just as we teach and preach through other forms of art, we can do so through games as well. Because people learn through doing, it is a way for players to absorb concepts in an efficient and memorable manner.
• Second, games are a natural way for "digital natives" to interact with concepts. If we want to engage this population, we should do so in a media that interests them.
Finally, if people are going to play games, perhaps we can give them some games with additional value beyond entertainment.

This course is intended as a broad introduction to the field of serious games. We will look at a number of examples of existing serious games in order to learn through case studies. The focus will be on game design but we will also look at development issues. We will explore serious game development and how the components of games may be applicable to other areas.

In order to study serious games, however, we need to study games. We will therefore look at the design of games in general.

The course project this semester is a game that is developed for an outside client. These are people with identified needs. They will be your domain experts who understand the needs, the objectives, the audience and the way to evaluate the result. They are also the people who will need to be adding content to the game.

Target Audience
COMP 585 is intended for computer science majors who are interested in the area of game development and have the requisite background to be pursuing advanced topics in the field.

Prerequisites
C or better in COMP 401, 410, 411, and 426.

Goals and Key Learning Objectives
By the end of the course, each student will

- Understand all elements of good game design at a general level and understand at least one element in significant detail
- Be able to design elements of a game and explain the benefits of those design decisions
- Be able to identify elements of an existing game and critique the decisions
- Understand the interdisciplinary nature of game design through their team experience
- Understand the elements of games that are universal and those that are unique to video games
- Understand the basics of computer game development
- Be able to use a game development platform for basic tasks
- Be able to instrument a game in order to evaluate its effectiveness
- Be able to critique serious games as games and in their effectiveness

Course Requirements
The major project of COMP 585 is the instructor-mentored team design and implementation of a serious game. Teams will meet regularly with the instructors (alternating weeks between
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the professor and the teaching assistant). Project grades are based on design, implementation, documentation, effort, teamwork, and accomplishment.

The other primary assignment is a team class presentation. Game teams will sign up for a class topic and will be responsible for the full class period with a presentation and class exercise. Class presentations require preparation meetings with the instructor. Presentations are required to include presentation and critiques of relevant games.

In addition to the COMP 585 requirements, students in COMP 585H will undertake an honors research project. The topic of the honors project will be negotiated between the instructor and student and can be very broadly defined. The only requirement is that it include independent research. There will be an additional weekly meeting with the professor.

The final exam will be take-home and will be due at the beginning of the exam period.

The final exam period (4-7 Monday, May 7) will be a gamefest at which students present their games and classmates get to play them.

Key Exams and Assignments
Besides demonstrating your team game to the instructor on a regular basis, demos of it will be made in class. This will give you the opportunity to gain valuable feedback from classmates and judge your progress compared to other teams.

Other key dates will be class presentations, which will be assigned the second week of class. Lectures through much of the semester will be student-given. A tentative list of topics from which students can choose to present follows. It is a tentative list because students are welcome to propose additional topics that they consider interesting.

- Narrative
- Graphic styles
- Sound
- Game play (game mechanics and balance)
- Level design
- Physics engine (3D)
- Game systems (consoles, VR, AR)
- Music (emotions, mood)
- Characters
- Graphics implementation (including light, camera)
- Procedural generation
- AI in games
- Evoking emotions: (empathy, horror, perspective, moral decisions)
- Health
- Education
- Training
- Social change
- Accessibility
- Gender
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- Marketing (use of games in advertising, marketing of games, in game advertising)
- Networking
- How games change us (age, violence)

Grading Criteria
Course grading weights are as follows:
  - Team game: 55% (divided evenly between the game and the design)
  - Class presentation: 25%
  - Final exam: 10%
  - Honors project: 10%

Presentation grades include both content and style. While not everyone is a natural speaker, communication is a critical skill and students are expected to master the basics.

Course Policies
Attendance: While attendance is not taken in the COMP 585 class, I expect student attendance at all peer presentations. For other classes, I only point out that there is no textbook in this class because the content is not available in any simple form. If you are interested in the content, you need to listen to lectures.

The course final is given in compliance with UNC final exam regulations and according to the UNC Final Exam calendar.

Honor Code
Collaboration and peer-learning are necessary for team projects. Only the final exam is not to be done collaboratively. All materials that are publicly available are acceptable sources as long as they are properly cited and credited.

Schedule
The exact schedule for the class will be published on the web.

Disclaimer
This syllabus may not be updated during the semester. Updated information will be published on the class website. If there are discrepancies between the information here and on the website, the website information is considered definitive.

Last updated 10 January 2018