

COMP 1501: Computer Game Design

Contact

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Prerequisites

The main prerequisite for this course is a familiarity with a variety of computer games. However, some programming knowledge will be needed during the term, probably acquired by having previously taken COMP 1405; COMP 1405 or equivalent is a formal prerequisite. If you took COMP 1405 last term, you are probably taking COMP 1406 this term.

Textbooks and Resources

There is no required textbook for the course. Course notes, expanding on the material presented in class, will be provided throughout the term. A recommended book is Jesse Schell's *The Art of Game Design: A Book of Lenses*, which covers much of the same ground as this course. Additional material will be drawn from *Characteristics of Games* by Elias et al. and this book is also recommended for the serious student of games.

We will use the Processing programming environment for some assignments and labs, and for the project. Processing is installed in the labs and is also available as a free download from www.processing.org.

Topics

The course's main topics include the following:

- Taxonomy of games: what is a game and what kinds of games are out there?
- Elementary game programming: what technical structures are present in a basic game?
- Theory of fun: what kinds of fun are there? In what ways are games fun?
- Probability: how to analyze random outcomes
- Graphs: formal structures for representing various game entities
- Narrative in games: the Hero's Journey and alternative frameworks

Grading Scheme

Assignments: 20%
Tutorials: 10%
Midterm: 15%
Course project: 20%
Final exam: 35%

Course Project

Working in a group of 2 or 3, you will design and implement a computer game and present it to the class. The implementation will be done in Processing (Java). The game should be an original design effort, meaning that it should not be a copy, clone, or parody of an existing game, nor should it use preexisting characters or settings (e.g., it should not refer to Harry Potter, Batman, or Darth Vader). More details about the project will be described in class during the term.

Game Canon

Some background knowledge of games is assumed. You should be familiar with the following classic games; if you are not, remedy this within the first month of class.

- at least one trick-taking card game, such as whist, spades, or bridge
- chess
- Monopoly
- Risk
- Scrabble
- snakes and ladders
- tic-tac-toe

In addition, you should have at least passing knowledge of the following games, or if not these specific games then another similar game.

- Asteroids
- Civilization (or another 4X)
- Counterstrike (or another FPS)
- Diablo 2 (or another ARPG)
- Pac-Man
- Rogue (or another primitive roguelike, such as Angband or Moria)

- Space Invaders
- Starcraft (or another RTS)
- Skyrim (or another large-scale modern CRPG)
- World of Warcraft (or another MMO)