

CSE 4285 Game Design (3 credits)

Primary instructor: Philip Bernhard

Textbooks and references:

Steve Rahin (Editor), Introduction to Game Development, 2nd edition. Charles River Media. ISBN 13: 978-1-58450-679-9, ISBN 10: 1-58450-679-2.

Course information:

2014–2015 Catalog description: CSE 4285 Game Design (3 credits). Focuses on the design of video and computer games. Covers the history and business of video and computer games, game design principles and mechanics, audio and visual design, game architecture, collision detection and resolution, and artificial intelligence.

Prerequisites by topic: Programming experience with data structures

Place in program: Advanced elective

Course outcomes & related student outcomes: The student will be able to

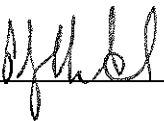
1. Describe the history of video and computer games. (10: Knowledge of history and present issues)
2. Describe aspects of the video and computer game industry. (6: Analyze computing's impact)
3. Understand and be able to apply game design principles and mechanics. (4: Apply mathematical, scientific, algorithmic, and theoretical principles, to model, design and evaluate software systems and processes)
4. Describe typical software game architectures. (1: Fundamental knowledge)
5. Understand and demonstrate algorithmic techniques for collision detection and resolution. (1: Fundamental knowledge)
6. Understand and demonstrate artificial intelligence techniques applicable to video and computer games. (1: Fundamental knowledge)
7. Describe game engines, modeling tools, languages, and development environments. (3: Skillful use of tools)

Topics covered:

1. Video and computer game history (2 hours)
2. Business of computer games (3 hours)
3. Game design principles and mechanics (8 hours)
4. Visual design (6 hours)

5. Game architecture (5 hours)
6. Collision detection (5 hours)
7. Collision resolution (5 hours)
8. Artificial intelligence techniques (5 hours)

Approved by: Phil Bernhard, Associate Professor

Signature:  Date: 2/4/15