

Master Course Syllabus
School of Engineering and Computer Science
Washington State University Vancouver
CS 447
Computer Game Design
3 Semester Hours
(3 lecture hours)

Catalog Description

Design and implementation of computer games

Prerequisite Courses

- CS 223 with a C or better
- CS 320 with a C or better

Prerequisite Topics

- Two courses involving object oriented programming
- Programming proficiency

Measured Course Outcomes

Students taking this course will:

1. Describe a software design to meet the requirements of a complex computer game. (Contributes to performance criterion 2a.)
2. Create a design document for a significant programming project. (Contributes to performance criterion 3a.)
3. Deliver a well-organized project pitch. (Contributes to performance criterion 3b.)
4. Interact appropriately with team members. (Contributes to performance criterion 3c.)
5. Develop project goals and tasks as a team. (Contributes to performance criterion 5a.)
6. Work as an effective team member to implement a functioning computer game. (Contributes to performance criterion 5c.)

Covered Course Outcomes

Students taking this course will also:

1. Demonstrate competent game programming skills and technical knowledge (Contributes to performance criteria 2b.)

Required Textbooks

None.

Reference Material

Per instructor.

Major Topics Covered in the Course

1. History of games

2. Game engines / APIs / 2D Graphics
3. Computational geometry
4. Physics and collision detection
5. Artificial intelligence
6. Networking: client-server architectures
7. Psychology and social issues
8. Communication: proposals and presentations

Projects

Programming Project Area	Weeks
Individual Game Project	4
Team Game Project	4

Design, Implementation and Analysis

This course requires students to integrate techniques introduced in previous courses with new knowledge about game design and technical knowledge about specific game engines, or APIs upon which their project(s) will be built. Students will design and implement two significant programming projects to showcase their technical skills.

Students will see two major projects from conception to fruition. Analysis skills will be used to craft goals, timelines and technical approaches to achieving the desired final products.

CS2013

This course provides coverage of CS2013 knowledge areas. Values listed are minimum course hours dedicated to the topic, percentages indicate the fraction of CS2013 knowledge area topics covered (acceptable values are: <25%, 25-75%, >75%, or 100%).

Area	Tier 1	Tier 2	Elective
NC/Introduction	1 (25-75%)		
NC/Networked Applications	2 (25-75%)		
PDB/Game Platforms			1 (25-75%)
SE/Software Project Management		1 (25-75%)	
SP/Professional Communication	1 (25-75%)		

Course Coordinator:	Scott Wallace
Last Updated:	August 29, 2019
Syllabus Version Number:	2.1