

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 320 – Principles of Software Engineering

CS 223 – Advanced Data Structures

Prerequisite Topics

- Two courses involving object oriented programming
- Programming proficiency

Measured Course Outcomes

Students taking this course will (among other things):

1. Create a design document for a significant programming project. *(Contributes to performance criterion F-1)*
2. Work as an effective team member to implement a functioning computer game. *(Contributes to performance criterion D-3)*
3. Create and adhere to a team-project timeline. *(Contributes to performance criterion D-1)*
4. Provide technical debriefing and documentation appropriately during projects. *(Contributes to performance criterion K-1)*
5. Demonstrate competent game programming skills. *(Contributes to performance criterion C-3)*

Required Textbooks

None required.

Reference Material

Per instructor.

Major Topics Covered in the Course

1. History of games
2. Game engines / APIs
3. Modeling physics
4. Artificial intelligence
5. Graphics: sprites and animation
6. Networking: client-server architectures
7. User interface design
8. Story design

Laboratory Projects

Programming Project Area	Weeks
Individual Game Project	3
Team Game Project	6

CSAB Category Content

	FUNDAMENTAL	ADVANCED		FUNDAMENTAL	ADVANCED
Data Structures	0	0	Computer Organization and Architecture	0	0
Algorithm & Software Design	0	2	Concepts of Programming Languages	0	0

Oral and Written Communications

Students will create high-level design specifications for their projects and deliver these as written reports. Students will also participate in oral debriefing sessions in which technical aspects of their project are discussed and reviewed by other members of the class.

Social and Ethical Issues

The social impact and ethical issues of computer games are discussed.

Theoretical Content

None specified

Problem Analysis

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

Solution Design

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.

CC2001

This course provides coverage of topics in the following areas (hours listed are minimums):

PF5. Event-driven Programming [core]	5
PF2. Algorithms and Problem Solving [core]	3
SE1. Software Design [core]	3
SE2. Using APIs [core]	5
SE3. Software Tools and Environments [core]	3
GV8. Computer animation [core]	3

Course Coordinator: Scott Wallace
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