



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Computational Thinking in Context: Game Development

CSE 1213

Credit Hours:

4.00

Course Levels:

Undergraduate (1000-5000 level)

Course Components:

Lecture

Lab

Course Description:

Introduction to computational thinking, focusing on problem solving and programming concepts and skills needed to develop video games.

Course Goals / Objectives:

- Be competent with using basic constructs provided by high-level imperative programming languages: sequencing, selection, and iteration.
 - Be familiar with algorithmic thinking.
 - Be familiar with using basic data structure interfaces such as arrays or lists in simple programs.
 - Be familiar with procedural composition.
 - Be exposed to procedural abstraction by defining new blocks
 - Be familiar with basic terminology, software architecture and concepts of video game development.
 - Understand the basic frame loop, sprite movement and graphics of 2D games.
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Course Topics:

- Basic concepts of video games
 - Introduction to programming for web-based games
 - Loops, new definitions, simple controls
 - Conditionals, Boolean expressions, advanced controls
 - Nested loops, complex control structures
 - Sprites, sprite sheets, image and canonical coordinates
 - Course project: Breakout game
 - Classes and objects
 - Course project: 2D scroller
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Designation:

Elective