



JavaScript Game Design Syllabus

Course Overview

This course introduces students to the fundamentals of JavaScript programming through game design. Students will learn how to build interactive games by exploring object-oriented programming concepts, user experience design, animations, and sound effects. By the end of the course, students will develop a portfolio of games, showcasing their creativity and technical skills.

This course is arranged for beginner level learning, recommended age of 11+ years, with over 35+ hours of content throughout the course. The coding Languages that will be utilized the most will be JavaScript, HTML, and CSS.

Course Objectives

By the end of this course, students will:

- Understand the basics of JavaScript and its application in game design.
- Develop games using key programming concepts, including functions, objects, and events.
- Incorporate sound, graphics, and user interactions to enhance gameplay experiences.
- Apply problem-solving skills to design and refine game mechanics.
- Build a game portfolio demonstrating their skills and creativity.

Course Outline

Lesson 1: Intro to Basics

- 1.1 - Introduction
- 1.2 - Workspace
- 1.3 - Text Editor
- 1.4 - Functions

- 1.5 - Library
- 1.6 - Ball Object
- 1.7 - Object Types
- 1.8 - Properties
- 1.9 - More Properties
- Quiz 1

Lesson 2: Intro to Functions and UX

- 2.1 - Paddles
- 2.2 - Key Down
- 2.3 - onHit Functions
- 2.4 - Keeping Score
- 2.5 - Sound Effects
- 2.6 - Menu
- 2.7 - Gameover
- 2.8 - Custom Gameover
- 2.9 - Final Touches
- Pong Upload
- Quiz 2

Lesson 3: Interactive Game Development

- 3.1 - Fish Game
- 3.2 - Background Images
- 3.3 - Changing Images
- 3.4 - Acceleration
- 3.5 - Timers
- 3.6 - Crumb
- Quiz 3

Lesson 4: Enemies and Challenges

- 4.1 - Randomizing Enemies
- 4.2 - More Enemies
- 4.3 - Eating Enemies
- 4.4 - Keeping Score
- Quiz 4

Lesson 5: Enhancing User Experience

- 5.1 - Fish Menu
- 5.2 - Fish Gameover
- 5.3 - Win Screen
- 5.4 - Background Music
- FishGame Upload

- Quiz 5
- Test 1

Lesson 6: Platform Game Mechanics

- 6.1 - Platform Game
- 6.2 - Walking
- 6.3 - Jumping
- 6.4 - Key Release
- Quiz 6

Lesson 7: Platforms and Levels

- 7.1 - Platform Object
- 7.2 - Jumping on Platform
- 7.3 - Saving in Arrays
- 7.4 - Level 1
- Quiz 7

Lesson 8: Advanced Gameplay and Features

- 8.1 - Shooting a Laser
- 8.2 - Flag & Score
- 8.3 - Enemy Robot
- 8.4 - Jump Pad and Trash
- 8.5 - onHits
- Quiz 8

Lesson 9: Polishing Side-Scrolling Games

- 9.1 - Music
- 9.2 - How to Play
- 9.3 - Next Level, Win
- 9.4 - Gameover
- Side Scroll Upload
- Quiz 9

Lesson 10: Custom Game Design

- 10.1 - Custom Game
- 10.2 - PiskelApp
- 10.3 - Start Coding
- 10.4 - Portfolio Part 1
- 10.5 - Portfolio Part 2

- Own Game Upload
- Next Course

Resources

Required:

- A computer with an internet connection
- Code editor (e.g., Visual Studio Code)
- Web browser (Chrome or Firefox recommended)