# CodeHS

**Georgia Foundations of Interactive Design Syllabus**
**Middle School (33 contact hours)**

## Introduction

The Georgia Foundations of Interactive Design course provides an exploratory foundation in the design and development of websites and games. It is designed to be taught in a 9-week rotation in 45-minute daily classes. Through integrated instructional activities, students will have opportunities to apply employability skills and to research possible career options in the information technology area. Students who successfully complete this course will be prepared for the following pathways upon entering high school: Web & Digital Design, Web Development, and Game Design. This course may be taught in 6th, 7th, or 8th grade.

## Course Overview

**Prerequisites:** There are no official prerequisites for the Georgia Foundations of Interactive Design course. This course is meant to be a first-time introduction to game design and web design and does not require students to come in with any computer programming experience.

**Learning Environment:** The course utilizes a blended classroom approach. The content is a mix of web-based and physical activities. Students will write and run code in the browser, create websites, and engage in in-person collaborative exercises with classmates. Teachers utilize tools and resources provided by CodeHS to leverage time in the classroom and give focused 1-on-1 attention to students. Each unit of the course is broken down into lessons. Lessons consist of video tutorials, short quizzes, example programs to explore, written programming exercises, free response exercises, collaborative creation projects, and research projects.

**Programming Environment:** Students write and run programs in the browser using the CodeHS editor. Students will be able to write both text-based and block-based HTML/CSS and JavaScript programs.

## Course Breakdown

**Module 1: Web Design (11 hours)**
In this module, students learn the basics of HTML, CSS, and the processes involved in viewing web pages on the internet. Students create several simple web pages using the CodeHS online editor to gain practice!

| Objectives / Topics Covered | <ul><li>Computer Science Careers</li><li>HTML</li><li>Formatting Text</li><li>Links</li><li>Images</li><li>Lists & Tables</li></ul> |
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| | ● CSS<br>● CSS by Tag, Class, and ID<br>● Color Theory |
| Assignments / Labs | ● HTML tags, structure and formatting<br>● Adding links and images<br>● Creating lists and tables<br>● Using CSS Selectors<br>● Separating style from structure<br>● Using CSS to style your own websites<br>● Color Theory and establishing a brand |

**Module 2: Project: My Website Portfolio (7 hours)**
This unit introduces students to the theory and practice of user interface design. Students learn about what makes an engaging and accessible user interface and will employ an iterative design process including prototyping and user testing to design and develop their own engaging web pages.

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| Objectives / Topics Covered | ● What makes an engaging interface?<br>● Various User Interface (UI) Design techniques<br>● Accessibility issues<br>● Creating Content<br>   ○ Graphics<br>   ○ Audio<br>   ○ Video<br>   ○ Animation<br>● Prototyping<br>● User testing |
| Assignments / Labs | ● Research existing user interfaces<br>● Assess the user interfaces of various websites<br>● Research a problem, and gather empathy and insights for stakeholders who are involved in the problem<br>● Create original content such as graphics, audio, video and animation<br>● Design a website using paper prototypes, test these prototypes and get feedback from your peers, and improve your design before implementing it with code |

**Module 3: Game Design (4 hours)**
Students learn the basics of game design including the history, potential careers, and game documentation.

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| Objectives / Topics Covered | ● History of Video Games<br>● Careers in Video Games<br>● Elements of Game Design<br>● Game Documentation |
| Assignments / Labs | ● Compare and contrast different types of video games<br>● What does it take to become a game developer?<br>● What makes games fun?<br>● Creating a Game Design Document (GDD) |

**Module 4: Creating a Game with Code (11 hours)**
In this module, students will learn how to use block coding to make-a-shot game. They will customize different aspects of their program to create a final product that can be shared with family and friends.

| Objectives / Topics Covered | <ul><li>Block Coding (JavaScript)</li><li>Events</li><li>Images</li><li>Sound Effects</li><li>Event Handlers</li><li>Parameters</li></ul> |
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| Assignments / Labs | <ul><li>Add event handlers</li><li>Modify parameters</li><li>Add images, sounds, and voiceovers</li><li>Create a mini-golf game</li></ul> |