FRONT–END WEB DEVELOPMENT
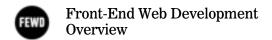
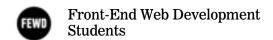**FEWD** Front-End Web Development
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OVERVIEW

THE FRAMEWORK

This 10-week course introduces students to the basics of programming for the web using HTML, CSS, and JavaScript. This is a beginners course that teaches students how to build the visual and interactive components of a website. Students learn how to create the structural foundation of a site (HTML), style it (CSS), and add logic to control the behavior (JavaScript) of their website. Students gain an understanding of how the web works and customize their sites using their own designs and ideas. By the end of this course, students should be able to:
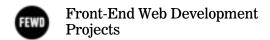
- Explain how the web works
- Create the structure and style of a website using HTML and CSS
- Apply interactivity to a site using programming fundamentals in JavaScript
- Host a website on a server
- Know the basic technical vocabulary to communicate with front-end web developers

STUDENTS

ENTREPRENEURS SEEKING TO CREATE AN ONLINE PROTOTYPE

This course provides individuals looking to translate their business ideas into a working prototype with the skills necessary to build a thoughtfully designed website.

CAREER CHANGERS

This course provides individuals looking to break into the field of web development with the skills necessary to understand what it means to program for the web.

BACK-END WEB DEVELOPERS

This course provides individuals with back-end programming experience with the skills necessary to control the client-side components of web applications.

NEWBIES

This course provides individuals with no programming experience with the skills required to build your first website using HTML/CSS and JavaScript.
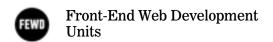
PROJECTS

FINAL PROJECT

The final project for FEWD is to design and build a website of your choice using HTML/CSS and JavaScript. This project tests your knowledge of how to structure, style, and make your site interactive. The result is a site that can be used in your portfolio. The objective of the project is to:

‣ Demonstrate understanding of all HTML/CSS and JavaScript topics covered throughout the course
‣ Apply knowledge gained during this course by building a website from scratch
‣ Combine technical and design skills to create a website that is compatible with the latest modern browsers and devices

We encourage you to exercise your creativity; instructors will validate feasibility and manage scope.

UNITS

UNIT 1: HTML / CSS

UNIT 2: JAVASCRIPT

1 HTML / CSS

2 FUNDAMENTAL
MODELING TECHNIQUES

1 INTRODUCTION TO WEB DEVELOPMENT AND BUILDING WEB PAGES
- Define how DNS servers, web servers and web browsers work together to deliver interactive web pages
- Describe a typical web production workflow and name the responsibilities designated to each of the various roles
- Manage files using a text editor
- Identify the Doctype in an HTML document and indicate whether the document is HTML5
- Differentiate between the use of HTML and CSS. Apply best practices such as including CSS in a separate file, and avoid using both embedded and inline CSS styles

2 MORE HTML /CSS BASICS
- Apply HTML tags: <head> <link>, <script>, <style>, <meta> to web pages
- Apply tags to HTML document to effectively section content
- Identify deprecated HTML and practice the use of more flexible alternatives with CSS
- Differentiate between the various image file types, as well as basic web color principles: RBG, CMYK, hexadecimal color
- Experiment with basic CSS properties such as: background, fonts, and text to style a web page
- Connect to a web server via an FTP client; manage files both locally and remotely

3 ADVANCED CSS
- Define CSS Box Model, and demonstrates ability to properly manipulate elements using padding, margin, and border
- Ability to use the browser web inspector to view page source and debug code
- Differentiate between classes and IDs and choose the best selector
- Explain CSS "cascade" including importance, specificity, and inheritance

4 PAGE LAYOUT AND IMPLEMENTING SEARCH ENGINE OPTIMIZATION
- Describe SEO best-practices related to HTML markup and content optimization
- Ability to develop a web page using the following regions: header, footer, sidebar, and multi-column layouts

1 HTML / CSS (CONTINUED)

5 PAGE LAYOUT
‣ Apply the header, footer, sidebar, and multi-column layout regions to develop a web page
‣ Experiment and predict effects of floats and clearing CSS positioning

6 NAVIGATION & SPRITES
‣ Apply HTML and CSS to style first-level navigation structure
‣ Explain the benefits of using image sprites, and apply techniques and tools to implement them
‣ Evaluate and improve carelessly written legacy code

7 LAB: BUSY HANDS
‣ Create a web site with linked pages using HTML/CSS best practices

8 GRID BASED DESIGN AND TYPOGRAPHY
‣ Describe benefits of grid-based design and experiment using a grid system to develop a web page
‣ Explain fundamental principles of web typography, and operate non-web-safe typography into a project

9 MOBILE WEB DEVELOPMENT: MEDIA QUERIES AND RESPONSIVE DESIGN
‣ Discuss benefits of developing for handheld devices
‣ Experiment with media queries to adapt content for different screen sizes using CSS

10 MORE HTML5 AND CSS3 TAGS AND CODE REVIEW
‣ Apply HTML5 / CSS3 specific tags to a webpage
‣ Assess and evaluate HTML/CSS code quality of peers (GitHub UI ToolKit)
‣ Support others in improving their code

2 JAVASCRIPT

11 INTRODUCING JAVASCRIPT
‣ Define the uses of JavaScript in a website
‣ Identify JavaScript in a web page (via link and embed code)
‣ Apply interactive components to previous HTML/CSS web pages
‣ Use GitHub application to pull and push from a repository

2 JAVASCRIPT (CONTINUED)

12 COMPUTATIONAL THINKING: VARIABLES AND CONDITIONAL LOGIC
- Define computational thinking and translate instruction into basic pseudo code
- Create and assign values to four different types of data (Strings, Numbers, Arrays, Booleans); apply functions to convert data
- Differentiate between null and undefined variables
- Perform basic arithmetic using JS code (add / subtract / multiply /divide)
- Experiment with web developer tools to debug JavaScript source code
- Identify when to use conditional logic, and practice correct syntax to produce different outcomes

13 COMPUTATIONAL THINKING (CONT.) AND LOOPS
- Apply a loop to JS file that affects the front-end of a web page
- Differentiate between types of loops

14 FUNCTIONS AND JAVASCRIPT OBJECTS
- Differentiate between anonymous and named functions
- Implement a self-executing function
- Identify and create objects in JavaScript
- Recognize and create JSON strings in addition to translate objects into JSON strings

15 THE DOM AND SELECTORS
- Define Document Object Model (DOM)
- Demonstrate how to manipulate the DOM using jQuery
- Intro to jQuery functions

16 JQUERY
- Apply the following jQuery methods to manipulate the DOM hide, remove, CSS, attr, addClass, removeClass, toggleClass, hasClass, text, HTML, wrap, before, after, append, prepend
- Ability to navigate through jQuery API documentation (jquery.com)

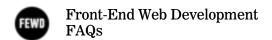# 2 JAVASCRIPT (CONTINUED)

17 EVENT DRIVEN DEVELOPMENT WITH JQUERY
▸ Define events and describe why they are useful
▸ Differentiate between events and event listeners
▸ Apply the "ready", form, mouse, and keyboard event and their bindings effectively
▸ Demonstrate the use of the "this" keyword and describe why it's useful
▸ Create and reset timers

18 LAB SESSION
▸ Demonstrate the ability to read others code and provide feedback

14 USEFUL FRONT END JS PLUGINS
▸ Define and implement a JS library

FAQS

WHY IS THIS COURSE RELEVANT TODAY?

Gaining experience with HTML/CSS and JavaScript is an essential 21st century skill. Most products and companies have a digital component to them, and more professionals are working closely with technical teams than ever before. Coding gives you the ability to bring your ideas to life in the digital space, make edits and updates to your own website, and communicate more effectively with technical stakeholders.

WHAT PRACTICAL SKILL SETS CAN I EXPECT TO HAVE UPON COMPLETION OF THE COURSE?

This course is designed to teach students how to quickly translate ideas into functional, stylized websites for personal or business purposes. This course enables students to create a site with the user in mind, become more innovative in their current job role, and master the technical vocabulary to communicate ideas to others.

WHO WILL I BE SITTING NEXT TO IN THIS COURSE?

This is a beginner level course, and a wide range of people sign up. In the past we've had designers, bloggers, entrepreneurs, project managers, and students.

WILL THERE BE ANY PRE-WORK?

Yes, very light. Just download a browser and text editor.

SHOULD I COME EQUIPPED WITH ANYTHING?

Yes, a laptop. A Mac is preferred but a PC is also okay.

FEWD

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