

Responsive Web Design and Development with HTML5, CSS3, and Bootstrap

Duration: 5 days / 40 hours

Prerequisites: Overview of Web Application Development (HTML, CSS, JS)

Day 1 – Day3

Module 1: A Quick Overview of Web Development

Lessons

- HTML is Part of a Team
- Client-side Programming
- Server-side Programming
- Web Development Technologies

Lab 1: None

Module 2: Introduction to HTML

Lessons

- Exercise: A Simple HTML Document
- Getting Started with a Simple HTML Document
- HTML Elements, Attributes, and Comments
- The HTML Skeleton
- Viewing the Page Source
- Special Characters
- HTML Elements and Special Characters
- History of HTML
- The lang Attribute

Lab 1: Getting Started

- A Simple HTML Document

Outcomes:

- Create a simple HTML page
- Understand HTML elements and attributes
- Understand how whitespace is treated in HTML
- Add special characters to HTML pages
- Explain the general history of HTML

Module 3: Paragraphs, Headings, and Text

Lessons

- Paragraphs
- Heading Levels
- Breaks and Horizontal Rules
- Exercise: Paragraphs, Headings, and Text
- The div Tag
- Creating an HTML Page
- Quoted Text
- Preformatted Text
- Inline Semantic Elements
- Exercise: Adding Inline Elements

Lab 1: Exercises included throughout lesson

- Creating an HTML Page
- Adding Inline Elements

Outcomes:

- Add paragraphs to HTML pages
- Add headings to HTML pages
- Add breaks and horizontal rules
- Add quoted text
- Add preformatted text
- Add phrase elements to identify textual elements
- Understand semantic content

Module 4: HTML Links

Lessons

- Links Introduction
- Text Links
- Absolute vs. Relative Paths
- Targeting New Tabs
- Email Links
- Exercise: Adding Links
- Lorem Ipsum
- The title Attribute
- Linking to a Specific Location on the Page
- Targeting a Specific Location on the Page

Lab 1: Exercises included throughout lesson

- Adding Links

Outcomes:

- Add basic text links
- Understand absolute vs relative paths
- Open links in new tabs/windows
- Add email links
- Link to specific locations on a page

Module 5: HTML Images

Lessons

- Inserting Images
- Image Links
- Adding Images to the Document
- Exercise: Adding Images to the Page
- Providing Alternative Images

Lab 1: Exercises included throughout lesson

- Adding Images to the Page

Outcomes:

- Add images to an HTML page
- Create image links
- Make images accessible

Module 6: HTML Lists

Lessons

- Unordered Lists
- Ordered Lists
- Definition Lists
- Exercise: Creating Lists

Lab 1: Exercises included throughout lesson

- Creating Lists

Outcomes:

- Create unordered (bulleted) lists
- Create ordered (numbered) lists
- Create definition lists

Module 7: Crash Course in CSS

Lessons

- Benefits of Cascading Style Sheets
- CSS Rules
- Selectors
- Combinators
- Precedence of Selectors
- How Browsers Style Pages
- CSS Resets
- CSS Normalizers
- External / Embedded / Inline Styles
- Exercise: Creating External Stylesheet
- Exercise: Creating Embedded Stylesheet
- Exercise: Adding Inline Styles
- div and span
- Exercise: Styling div and span
- Media Types
- Units of Measurement
- Inheritance

Lab 1: Exercises included throughout lesson

- Creating External Stylesheet
- Creating Embedded Stylesheet
- Adding Inline Styles
- Styling div and span Elements

Outcomes:

- Understand benefits of CSS
- Redefine element formatting
- Create/use selectors & combinators
- Understand cascade & precedence
- Use resets & normalizers
- Create external/embedded/inline stylesheets
- Style with div and span
- Understand media types, viewport, units, inheritance

Module 8: CSS Fonts

Lessons

- font-family
- @font-face
- font-size
- font-style
- font-variant
- font-weight
- line-height

- font shorthand
- Exercise: Styling Fonts

Lab 1: Exercises included throughout lesson

- Styling Fonts

Outcomes:

- Use font-family, size, style, variant, weight, line-height
- Use shorthand font

Module 9: Color and Opacity

Lessons

- About Color and Opacity
- Color and Opacity Values
- color
- opacity
- Exercise: Adding Color and Opacity to Text

Lab 1: Exercises included throughout lesson

- Adding Color and Opacity to Text

Outcomes:

- Use the color property
- Use the opacity property

Module 10: CSS Text

Lessons

- letter-spacing
- text-align
- text-decoration
- text-indent
- text-shadow
- text-transform
- white-space
- word-break
- word-spacing
- Exercise: Text Properties

Lab 1: Exercises included throughout lesson

- Text Properties

Outcomes:

- Use letter-spacing
- Use text-align
- Use text-decoration
- Use text-indent
- Use text-shadow
- Use text-transform
- Use white-space
- Use word-break
- Use word-spacing

Module 11: JavaScript Basics

Lessons

- JavaScript vs. EcmaScript
- The HTML DOM
- JavaScript Syntax
- Accessing Elements
- Where Is JavaScript Code Written?
- JavaScript Objects, Methods, and Properties
- Exercise: Alerts, Writing, Changing Background Color

Lab 1: Exercises included throughout lesson

- Alerts, Writing, Changing Background Color

Outcomes:

- Understand the DOM
- Understand JavaScript syntax
- Write inline and script block JavaScript
- Create external JS files
- Work with objects, methods, properties
- Reference HTML elements

Module 12: HTML Forms

Lessons

- How HTML Forms Work
- The form Element
- Form Elements
- Buttons
- Exercise: Creating a Registration Form

- Checkboxes
- Radio Buttons
- Exercise: Adding Checkboxes and Radio Buttons
- Fieldsets
- Select Menus
- Textareas
- Exercise: Adding a Select Menu and Textarea
- HTML Forms and CSS

Lab 1: Exercises included throughout lesson

- Creating a Registration Form
- Adding Checkboxes and Radio Buttons
- Adding a Select Menu and Textarea

Day 4 – Day5 : Focus on Project

Day 1 – Bootstrap Fundamentals & Layouts

Module 1: Introduction to Bootstrap

- What is Bootstrap?
- Why use Bootstrap over plain CSS?
- Versions of Bootstrap (v4, v5)
- How to include Bootstrap (CDN, local files, npm)

Module 2: Bootstrap Grid System

- Container types: `.container`, `.container-fluid`
- Rows and columns: `.row`, `.col-*`
- Responsive breakpoints: `sm`, `md`, `lg`, `xl`, `xxl`
- Nesting columns and offsets
- **Exercise:** Build a 12-column layout for a homepage.

Module 3: Bootstrap Typography & Utilities

- Headings, paragraphs, blockquotes
- Text colors, alignment, and spacing utilities (`m-`, `p-`, `text-center`)
- **Exercise:** Style a blog post using Bootstrap typography

Module 4: Bootstrap Components – Part 1

- Buttons and button groups
- Alerts, badges, and progress bars
- Cards: layout and customization
- **Exercise:** Create a card-based product display

Module 5: Bootstrap Forms

- Input fields, checkboxes, radio buttons, selects
- Form validation classes

- Inline and horizontal forms
- **Exercise:** Build a contact form using Bootstrap

Day 2 – Advanced Components & Responsive Design

Module 6: Bootstrap Components – Part 2

- Navbar and navigation menus
- Dropdowns and tooltips
- Modals and popovers
- **Exercise:** Build a responsive navbar with dropdowns

Module 7: Bootstrap Utilities & Helpers

- Spacing, display, and flex utilities
- Colors, backgrounds, borders
- Shadow and rounding utilities
- **Exercise:** Style a multi-section landing page

Module 8: Bootstrap Layouts & Responsiveness

- Responsive images and media
- Cards in grid layouts
- Visibility utilities (d-none, d-sm-block)
- **Exercise:** Make a 3-column product gallery responsive

Module 9: Bootstrap JavaScript Components

- Collapse, carousel, tabs, and accordions
- Using Bootstrap JS with data attributes and JS methods
- **Exercise:** Build a carousel with captions and indicators

Module 10: Mini Project – Build a Responsive Webpage

- Create a landing page with:
 - Navbar
 - Hero section
 - Cards for services/products
 - Contact form
 - Footer