Web development with ChatGPT

Duration: 32 Hours, 3 Days per week, 2 Hours per day

Module	Major Categories	Duration
Module 01	Introduction to Web Development	2 Hours
Module 02	Building Web Pages with HTML and CSS	6 Hours
Module 03	JavaScript Basics	6 Hours
Module 04	Integrating ChatGPT	12 Hours
Module 05	Deployment and Final Projects	4 Hours
Module 07	Final Assessment and Certification	2 Hours

Class No	Module Details	Duration
Module 1: Introduction to Web Development		
01	Day 1: Introduction to Web Development (2 hours) Session 1.1: What is Web Development? (30 minutes) • Define web development and its importance. • Explain the difference between front-end and back-end development. • Provide an overview of the web development landscape. Session 1.2: Choosing a Code Editor (30 minutes) • Present different code editors and Integrated Development Environments (IDEs). • Guide students in selecting and installing a code editor that suits their needs. Session 1.3: Setting Up a Local Development Server (1 hour) • Explain the concept of a local development server. • Demonstrate how to set up a local server for testing web applications. • Troubleshoot common server setup issues.	02 Hours 1 Day
Module 2: Building Web Pages with HTML and CSS		
02	Day 3: HTML Forms and Tables (2 hours) Session 2.1: Creating HTML Forms (30 minutes) • Introduce HTML form elements (<form>, <input>, <textarea>, etc.).	06 Hours 3 Days

- Explain the purpose of forms in web development (e.g., user input, data submission).
- Discuss form attributes, including action and method.

Session 2.2: Building Data Tables (30 minutes)

- Cover the creation of HTML tables using <table>, <tr>, <td>, and <th> elements.
- Explain the structure of a table, including rows and cells.
- Discuss table attributes for accessibility and styling.

Session 2.3: Form Validation Concepts (1 hour)

- Introduce the importance of form validation for user data input.
- Demonstrate basic client-side validation using HTML5 attributes like required and pattern.
- Discuss the role of JavaScript for advanced form validation.

Day 4: CSS Layout and Positioning (2 hours)

Session 2.4: The Box Model and Layout (30 minutes)

- Explain the CSS Box Model (content, padding, border, margin).
- Discuss how the Box Model impacts element sizing and spacing.
- Show how to modify box model properties to control layout.

Session 2.5: Positioning Elements with CSS (30 minutes)

- Cover CSS positioning properties (e.g., position, top, left, right, bottom).
- Demonstrate relative, absolute, and fixed positioning.
- Provide examples of common layout scenarios.

Session 2.6: Introduction to Responsive Design (1 hour)

- Define responsive web design and its significance in modern web development.
- Explain media queries and how they enable responsive layouts.
- Demonstrate how to create a simple responsive design using CSS.

Day 5: CSS Flexbox and Grid (2 hours)

Session 2.7: Creating Flexible Layouts with Flexbox (30 minutes)

- Introduce CSS Flexbox layout and its advantages.
- Explain the concepts of flex containers and flex items.

	• Demonstrate how to create flexible and responsive layouts with Flexbox.	
	Session 2.8: Building Grid-Based Layouts (30 minutes)	
	• Introduce CSS Grid layout and its capabilities.	
	• Explain the grid container and grid item concepts.	
	• Provide examples of grid-based layouts for different web design scenarios.	
	Session 2.9: Responsive Design with Flexbox and Grid (1 hour)	
	• Show how to combine Flexbox and Grid to create complex, responsive layouts.	
	• Discuss best practices for designing responsive web pages.	
	• Challenge students to create responsive layouts with Flexbox and Grid.	
	• Introduce CSS Flexbox layout and its advantages.	
	• Explain the concepts of flex containers and flex items.	
	• Demonstrate how to create flexible and responsive layouts with Flexbox.	

Module 3: JavaScript Basics		
03	Day 6: Introduction to JavaScript (2 hours)	06 Hours 3 Days
	Session 3.1: What is JavaScript? (30 minutes)	
	• Define JavaScript and its role in web development.	
	• Explain the difference between JavaScript, HTML, and CSS.	
	• Discuss real-world examples of JavaScript in action.	
	Session 3.2: Variables, Data Types, and Operators (30 minutes)	
	• Introduce variables and their purpose in JavaScript.	
	• Cover different data types (e.g., strings, numbers, booleans).	
	• Explain basic operators (e.g., +, -, *, /) for calculations.	
	Session 3.3: Basic Programming Concepts (1 hour)	
	• Teach fundamental programming concepts such as loops, conditionals, and functions.	
	• Walk students through writing their first JavaScript program.	
	• Encourage hands-on coding to reinforce concepts.	
	Day 7: Working with DOM (2 hours)	
	Session 3.7: Introduction to the Document Object Model (DOM) (30 minutes)	

	• Explain the DOM as a representation of a web page's structure.	
	• Introduce DOM elements, nodes, and the hierarchical structure.	
	• Show how to access the DOM via JavaScript.	
	Session 3.8: Accessing and Manipulating DOM Elements (30 minutes)	
	• Demonstrate how to select DOM elements using JavaScript.	
	• Teach basic DOM manipulation, such as changing text and styles.	
	• Encourage interactive exercises for hands-on practice.	
	Session 3.9: Handling User Events (1 hour)	
	• Discuss user events (e.g., click, input, submit) and their significance.	
	• Guide students in adding event listeners to DOM elements.	
	• Walk through practical examples of event-driven programming.	
	Day 8: JavaScript Events and Event Handling (2 hours)	
	Session 3.10: Introduction to Events in Web Development (30 minutes)	
	• Explain the role of events in web applications.	
	• Provide an overview of common DOM events (e.g., click, mouseover, keyup).	
	• Discuss how events enhance user interactivity.	
	Session 3.11: Event Listeners and Event Handling (30 minutes)	
	• Teach students how to attach event listeners to DOM elements.	
	• Demonstrate event handling functions and their parameters.	
	• Guide students in responding to user actions with event-driven code.	
	Module 4: Integrating ChatGPT	
04	Day 10: Introduction to ChatGPT (2 hours)	12 Hours 6 Days
	Session 4.1: What is ChatGPT? (30 minutes)	
	• Provide an overview of ChatGPT and its capabilities.	
	• Explain how ChatGPT can enhance user interactions in web applications.	

- Discuss real-world applications of chatbots in web development.

Session 4.2: Setting Up ChatGPT API Access (30 minutes)

- Guide students on how to obtain API access to ChatGPT.
- Explain the process of obtaining API keys or credentials.
- Discuss API usage limitations and best practices.

Session 4.3: Creating a Chat Interface (1 hour)

- Walk students through the process of designing a chat interface for their web application.
- Explain the structure of a chat window and message components.
- Provide examples of user-friendly chat interfaces.

Day 11: ChatGPT Integration (2 hours)

Session 4.4: Sending and Receiving Messages (30 minutes)

- Teach students how to send and receive messages to and from ChatGPT.
- Demonstrate API calls for interacting with ChatGPT.
- Discuss message formatting and handling responses.

Session 4.5: Managing Conversation State (30 minutes)

- Explain the importance of maintaining conversation history.
- Guide students in managing conversation context and state.
- Provide strategies for preserving user interactions.

Session 4.6: Implementing User-Friendly Interactions (1 hour)

- Discuss best practices for creating engaging conversations with ChatGPT.
- Show examples of effective chatbot interactions.
- Encourage students to design natural and context-aware conversations.

Day 12: Customizing ChatGPT (2 hours)

Session 4.7: Teaching ChatGPT Specific Responses (30 minutes)

- Explain how to teach ChatGPT specific responses and knowledge.
- Demonstrate techniques for customizing chatbot behavior.
- Discuss the limitations of fine-tuning.

	Session 4.8: Advanced ChatGPT Features (30 minutes)	
	• Explore advanced features and capabilities of ChatGPT.	
	• Cover topics like multiturn conversations and system-level instructions.	
	• Show how to handle complex interactions.	
	Session 4.9: Testing and Refining the Chatbot (1 hour)	
	• Guide students in testing their ChatGPT-integrated web applications.	
	• Encourage them to gather user feedback and make improvements.	
	• Discuss strategies for continuous refinement and optimization.	
	Day 13: Project-Adding ChatGPT to Your Web Application (6 hours)	
	Session 4.10: Integrating ChatGPT into the Project (1 hour)	
	• Assist students in integrating ChatGPT into their existing web project.	
	• Ensure that the chatbot aligns with the project's objectives and design.	
	Session 4.11: Creating Engaging Conversations (1 hour)	
	• Encourage students to design engaging and context-aware chatbot conversations.	
	• Provide guidance on how to create meaningful interactions.	
	• Address common challenges in chatbot design.	
	Session 4.12: Testing and User Feedback (1 hour)	
	• Encourage students to thoroughly test the ChatGPT-integrated web application.	
	• Facilitate user testing and gather feedback from peers.	
	• Discuss strategies for addressing user feedback and making improvements.	
	Module 5: Deployment and Final Projects	
05	Day 14-15: Final Project: Building an Interactive Website (4 hours)	4 Hours 2 Days
	Session 5.5: Final Project Introduction and Requirements (2 hours)	
	• Introduce the final project: building an interactive website.	
	• Discuss project requirements, scope, and objectives.	

	• Provide a design brief or project scenario.	
	Session 5.6: Design and HTML Structure (2 hours)	
	• Assist students in planning the project's design and layout.	
	• Guide them in creating the HTML structure for the interactive elements.	
	• Ensure that the project's HTML is semantically structured and accessible.	

	Module 6: Final Assessment and Certification	
06	• Final Assessment Exam	2 Hours 1 day