Hours	Topics Covered	Activities	Outcomes
1	Introduction to Web Development and Basics of HTML	- Overview of web development - Introduction to HTML	- Understand the basics of web development - Write simple HTML code
1	HTML Forms and Semantic HTML	- Creating forms using HTML - Using semantic HTML elements	- Learn about HTML forms - Understand the importance of semantic HTML
2	Introduction to CSS and Styling Basics	- Basics of CSS - Styling HTML elements	- Understand the role of CSS in web development - Apply basic styling to HTML elements
2	CSS Box Model and Layout	- Understanding the CSS box model - Implementing different layout strategies	- Master the CSS box model - Apply layout techniques to create structured web pages
2	Responsive Web Design with CSS Media Queries	- Implementing responsive design using media queries	- Create responsive web pages that adapt to various screen sizes
1	JavaScript Basics: Variables, Data Types, and Operators	- Introduction to JavaScript - Variables, data types, and basic operators	- Understand fundamental JavaScript concepts - Write simple JavaScript code
1	JavaScript Control Flow: Conditional Statements and Loops	- Using if statements, switch cases, and loops in JavaScript	- Implement conditional logic and loops in JavaScript
2	JavaScript Functions and Scope	- Defining and using functions in JavaScript - Understanding variable scope in JavaScript	- Master the use of functions in JavaScript - Grasp the concept of variable scope
2	DOM Manipulation with JavaScript	- Accessing and modifying the DOM (Document Object Model) with JavaScript	- Learn to manipulate HTML elements dynamically using JavaScript
2	Introduction to Frontend Frameworks (e.g., Bootstrap)	- Overview of popular frontend frameworks like Bootstrap	- Understand the benefits of using frontend frameworks - Implement a basic Bootstrap layout
2	Building a Simple Web Page with HTML, CSS, and JavaScript	- Practical session: Building a basic web page using HTML, CSS, and JavaScript	- Apply the learned concepts to create a simple interactive web page
2	Introduction to Backend Development and Basics of Node.js	- Overview of backend development - Introduction to Node.js	- Understand the basics of server-side programming with Node.js
2	Node.js Modules and NPM Package Management	- Creating and using modules in Node.js - Managing dependencies with NPM	- Master the use of modules in Node.js - Learn how to manage project dependencies using NPM
2	Building a Simple Backend API with Node.js and Express	- Creating a basic RESTful API using Node.js and Express	- Implement a simple backend API using Node.js and Express
2	Handling HTTP Requests and Responses in Node.js	- Understanding HTTP requests and responses in a Node.js application	- Learn to handle different types of HTTP requests and generate appropriate responses in a Node.js application
2	Introduction to Databases and Basics of MongoDB	- Overview of databases - Introduction to MongoDB	- Understand the role of databases in web development - Learn the basics of MongoDB
2	MongoDB CRUD Operations	- Practical session: Performing CRUD operations with MongoDB	- Master basic CRUD operations in MongoDB
2	Connecting the Backend and Frontend: Fetch API	- Making API requests from the frontend using the Fetch API	- Understand how to connect the frontend and backend using the Fetch API
2	Introduction to Asynchronous JavaScript	- Understanding asynchronous JavaScript - Callbacks, Promises, and Async/Await	- Grasp the concept of asynchronous programming in JavaScript
2	Handling User Authentication: JWT and Passport.js	- Implementing user authentication using JSON Web Tokens (JWT) and Passport.js	- Learn about user authentication strategies - Implement JWT-based authentication in a web application
2	Building a Full-Stack Web Application: Part 1	- Practical session: Building the frontend components of a full-stack web application	- Apply frontend development skills to build components for a full-stack web application
2	Building a Full-Stack Web Application: Part 2	- Practical session: Building the backend components of a full-stack web application	- Apply backend development skills to build components for a full-stack web application
2	Introduction to RESTful APIs	- Principles of RESTful APIs - Designing RESTful endpoints	- Understand the principles of RESTful API design - Design and implement RESTful endpoints in a web application
2	Consuming RESTful APIs in a Web Application: AJAX and Fetch	- Making asynchronous requests to RESTful APIs using AJAX and Fetch	- Learn to consume data from RESTful APIs in a web application using AJAX and Fetch
2	Introduction to Web Security	- Basics of web security - Common security vulnerabilities	- Understand the importance of web security - Identify and mitigate common security vulnerabilities in a web application
2	Introduction to Testing in Web Development	- Overview of testing methodologies in web development	- Learn the importance of testing in web development - Explore different testing methodologies
2	Unit Testing with Jest	- Writing and running unit tests using Jest	- Understand the concept of unit testing - Write and execute unit tests using Jest
2	End-to-End Testing with Cypress	- Implementing end-to-end tests using Cypress	- Learn the basics of end-to-end testing - Write and run end-to-end tests using Cypress
2	Version Control with Git and GitHub	- Basics of version control with Git - Collaborating on projects using GitHub	- Understand the fundamentals of version control - Learn how to collaborate on projects using Git and GitHub
2	System Deployment and Hosting: Heroku	- Deploying a web application to Heroku	- Learn the basics of deploying a web application - Host a web application on Heroku
2	Final Project Work Session	- Work on the final project	- Collaborate on the final project - Apply knowledge of web development fundamentals to solve a real-world problem
2	Final Project Work Session and Presentations	- Work on the final project - Final project presentations	- Finalize the implementation of the project - Showcase and present the final projects

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