**Mangaldai College**

**Department of Computer Science & IT**

Certificate Courses on **Web Development**



**Certificate Course on Web Development**

This certificate course in web development is designed to equip participants with the essential skills and knowledge required to build dynamic and responsive websites. The curriculum covers a wide range of topics, from the basics of HTML and CSS to advanced concepts like front-end frameworks and back-end development. The course also emphasizes hands-on learning through practical exercises and a final project where participants will apply their skills to create a web application.

**Key Learning Objectives:**

* Understand the foundational technologies of the web, including HTML, CSS, and JavaScript.
* Gain proficiency in designing and styling web pages using modern CSS techniques.
* Develop dynamic and interactive user interfaces with JavaScript and front-end frameworks.
* Learn the basics of server-side scripting and back-end development.
* Explore version control with Git for collaborative development.
* Acquire knowledge of responsive web design principles for creating mobile-friendly websites.
* Understand web security best practices to protect against common threats.
* Apply the acquired skills in a real-world scenario through a comprehensive final project**.**

**Prerequisite**:

No prior coding experience is required, but basic computer literacy is recommended.

**Course Outcomes:** After the completion of the course the student will be able to

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| **CO 1** | The Certificate in Web Development ensures proficiency in HTML, CSS, and JavaScript, enabling participants to design responsive websites. |
| **CO 2** | It covers Git for version control, introduces back-end development basics, and addresses web security. Through real projects, students showcase their skills, preparing for entry-level roles like Web Developer. |
| **CO 3** | The program emphasizes problem-solving, critical thinking, and effective communication, providing a well-rounded foundation for success in the dynamic field of web development. |

**Course Contents:**

**Unit 1: Introduction to Web Development**

Internet basics and the World Wide Web,Web browsers and developer tools, Introduction to HTML: structure, syntax, and common tags,Creating a simple HTML webpage,

**Unit 2: Cascading Style Sheets (CSS)**

Selectors, properties, and values in CSS,Styling text, colors, and backgrounds,Layout and positioning with the box model,Flexbox and Grid systems for advanced layouts

**Unit 3: JavaScript Basics**

Variables, data types, and operators in JavaScript,Control flow and loops,Document Object Model (DOM) manipulation,Handling events and user interactions

**Unit 4: Responsive Web Design**

Principles of responsive design,Media queries and breakpoints,Designing mobile-friendly layouts

Introduction to front-end frameworks like Bootstrap.

**Unit 5: Version Control with Git**

Introduction to version control and Git,Creating and managing repositories,Collaborative development on platforms like GitHub,Basic Git commands and workflows

**Unit 6: Front-End Frameworks**

Overview of front-end frameworks (React, Angular, Vue),Building dynamic and interactive user interfaces,Introduction to Single Page Applications (SPAs)

**Unit 7: Back-End Development**

Introduction to back-end development,Server-side scripting using Node.js, Python, or PHP,Database basics and interaction,API development and integration

**Unit 8: Web Security**

Common web security threats,Best practices for secure coding,Implementing SSL/TLS for secure communication,Addressing vulnerabilities like XSS and CSRF