

MITTALL INSTITUTE OF COMPUTER EDUCATION
RECOGNISED BY PRAAGYADEEP NGO



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Web Development

TAUGHT BY

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COURSE LENGTH

1 Year

SYLLABUS

THE COMPLETE WEB DEVELOPMENT



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WEB DEVELOPMENT FUNDAMENTALS

- ♦ Understand how websites work and how HTML, CSS and JavaScript contribute.
- ♦ Understand how the internet works and how websites are served.

HTML 5

- ♦ Learn the anatomy of HTML syntax to structure your websites.
- ♦ Understand the HTML boilerplate and HTML doctypes.
- ♦ Understand indentation and nesting in HTML code.
- ♦ Learn to use HTML tags to structure headings, paragraphs.
- ♦ How to structure HTML lists to create unordered and ordered lists.
- ♦ How to insert images using HTML
- ♦ How to create hyperlinks using anchor tags.
- ♦ Create multi-page websites.
- ♦ Learn HTML best practices.

CSS 3

- ♦ Understand what are cascading style sheets and how you can use it to style your website.
- ♦ How to use CSS selectors and properties.
- ♦ Learn about how to use inline, internal and external CSS.
- ♦ Understand CSS coding best practices.
- ♦ Learn about CSS specificity and inheritance.
- ♦ Learn and understand the CSS Box Model.
- ♦ Learn to use developer tools to inspect and diagnose CSS.
- ♦ Learn about CSS positioning and display properties.
- ♦ Learn about font styling using CSS and web safe fonts.
- ♦ Implement responsiveness using CSS media queries.
- ♦ How to use CSS float and clear properties.
- ♦ How combine CSS selectors and understand selector priority.

FLEXBOX

- ♦ Learn about why flexbox was introduced to CSS.
- ♦ Understand what happens when display is set as flex.
- ♦ Understand flex direction and how it affects layout.
- ♦ Learn to use align and justify for layout of child items
- ♦ Understand how child items are sized and distributed in a flexbox and use the flex shorthand property.

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GRID

- ♦ Learn about how grid is different to flexbox and their strengths and weaknesses.
- ♦ Understand what happens when display is set as grid.
- ♦ Learn how grid sizing is done and how to create and arrange a grid.
- ♦ Learn to position items in a grid and how placement across rows and columns is done.
- ♦ Learn to use grid in combination with flexbox to create complex layout using native CSS.

BOOTSTRAP

- ♦ Understand the difference between native CSS tooling and external frameworks.
- ♦ Learn to install the Bootstrap framework into your website.
- ♦ Understand the Bootstrap 12 column layout system.
- ♦ Learn to use Bootstrap components such as buttons, carousels, cards and navigation bars.
- ♦ Accessing and incorporating designer icons from Bootstrap.
- ♦ Find and use bootstrap code snippets, examples and pre-built templates to quickly created beautiful mobile-first websites.

WEB DESIGN

- ♦ Learn the fundamental principles of web design, UI and UX.
- ♦ Understand colour theory and how to choose and use modern colour palettes to make your website look professional.
- ♦ Understand modern typography and choose free-for-commercial use typefaces to make your website user friendly and stylish.
- ♦ Learn to manage user attention using the key principles of User Interface (UI) design.
- ♦ Learn to design user friendly websites by understanding User Experience (UX) design.

DOCUMENT OBJECT MODEL (DOM)

- ♦ Learn the tree structure of HTML based websites.
- ♦ Traverse through the document using object notation.
- ♦ Separation of concerns and coding best practices.
- ♦ Manipulate and change the HTML elements using your understanding of the DOM.

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JAVASCRIPTES 6

- ♦ Compare programming languages like JS with scripting and markup/stylesheet languages.
- ♦ Overview of JavaScript and its uses.
- ♦ Understand how to work with a code editor and IDEs.
- ♦ Basic syntax and data types in JavaScript, including:
- ♦ Variables and their scope (let, const)
- ♦ Data types (string, number, boolean, null, undefined, symbol)
- ♦ Operators and expressions, including arithmetic, comparison, and logical operators
- ♦ Control structures like if/else statements and loops, including:
- ♦ The for loop and while loop
- ♦ The for...of loop to iterate over arrays
- ♦ The for...in loop to iterate over object properties
- ♦ Functions and their importance in JavaScript, including:
- ♦ Function declaration and expression
- ♦ Function scope and closures
- ♦ Arrow functions and their syntax
- ♦ Higher-order functions, including:
- ♦ Passing functions as arguments to other functions
- ♦ Returning functions from other functions
- ♦ The map, filter, and reduce methods on arrays and their use with higher-order functions
- ♦ Arrays and their methods, including:
- ♦ Creating and accessing arrays
- ♦ Adding and removing elements from arrays
- ♦ The slice method for slicing arrays
- ♦ The concat method for concatenating arrays
- ♦ The indexOf and lastIndexOf methods for finding elements in arrays
- ♦ The map, filter, and reduce methods for manipulating arrays
- ♦ The spread syntax ... to spread the elements of an array into a new array or function call
- ♦ Object-oriented programming in JavaScript, including:
- ♦ Creating objects with object literals
- ♦ Creating objects with constructor functions and the new keyword
- ♦ Creating objects with classes and the class keyword
- ♦ Adding and accessing properties and methods on objects
- ♦ The this keyword and how it works in object methods
- ♦ The super keyword for accessing parent class methods and properties
- ♦ Manipulating objects and arrays using methods and iteration, including:
- ♦ The Object.keys and Object.values methods for getting the keys and values of an object as arrays
- ♦ The for...in loop for iterating over object properties
- ♦ The Object.assign method for copying properties from one object to another

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DATABASE FUNDAMENTALS

- ♦ **Data Relationships**
- ♦ **Designing a Data Model**
- ♦ **Relational Databases**
- ♦ **Alternative Databases**
- ♦ **Entity Relationship Modelling (ERM) and Object Relational Mapping (ORM)**

SQL DATABASES

- ♦ **Working with Database Schemas**
- ♦ **Create-Read-Update-Destroy (CRUD)**
- ♦ **Database Joins**
- ♦ **Querying SQL databases**

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POSTGRES DATABASES

- ◆ **PostgreSQL queries**
- ◆ **Create-Read-Update-Destroy (CRUD)**
- ◆ **Postgres Best Practices**
- ◆ **Installing Postgres**
- ◆ **Relational Databases**
- ◆ **Implementing One to Many, One to One and Many to Many Relationships.**
- ◆ **Working with Postgres in Node with the pg Package.**

DEPLOYMENT

- ◆ **Understand hosting and deployment.**
- ◆ **Hosting static websites with GitHub Pages.**
- ◆ **Deploying server based applications with Heroku.**
- ◆ **Deploying Databases with Mongo Atlas.**

