



## Curriculum Of Full Stack With Mern

### WEB DESIGNING (HTML)

#### MODULE 1: WEB PROGRAMMING INTRODUCTION

- Architecture of a website
- Different technologies in making the website
- Web Development Introduction

#### MODULE 2: HTML-INTRODUCTION

- History of HTML
- What you need to do to get going and make your first HTML page
- What are HTML Tags and Attributes?
- HTML Tag vs. Element
- HTML Attributes

#### MODULE 3: HTML-HEADERS

- Title
- Base
- Link
- Styles
- Script
- Meta

#### MODULE 4: HTML-BASIC FORMATTING TAGS

- HTML Basic Tags
- HTML Formatting Tags
- HTML Color Coding

#### MODULE 5: HTML-GROUPING USING DIV SPAN

- Div Tag
- Span Tags

#### MODULE 6: HTML SEMANTIC ELEMENTS

- <article>
- <aside>

- <details>
- <figure>
- <footer>
- <header>
- <main>
- <mark>
- <nav>
- <section>
- <summary>
- <time>

#### MODULE 7: HTML-LISTS

- Unordered Lists
- Ordered Lists
- Definition list

#### MODULE 8: HTML-IMAGES

- Image
- Image Mapping
- Background Images

#### MODULE 9: HTML-HYPERLINK

- Anchor Tag.
- URL - Uniform Resource Locator
- Relative
- Absolute Address

#### MODULE 10: HTML-TABLE

- < table >
- < th >
- < tr >
- < td >
- < caption >
- < the ad >
- < t body >
- < toot >
- < cogroup >
- < col >



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### MODULE 11: HTML-I FRAME

- Using I frame as the Target

### MODULE 12: HTML-FORM

- HTML Forms
- HTML Form Attributes
- HTML Form Elements
- HTML Input Types
- HTML Input Attributes
- HTML Input form Attributes
- < text area >
- < button >
- < select >
- < label >

### MODULE 13: HTML GRAPHICS

- HTML Canvas Graphics & SVG Graphics

### MODULE 14: HTML MEDIA

- HTML Media
- HTML Video
- HTML Audio
- HTML Plug-in
- HTML You Tube

### MODULE 15: HTML APIS

- HTML Geolocation
- HTML Drag/Drop
- HTML Web Storage
- HTML Web Workers
- HTML SSE

## CSS

### MODULE 1: CSS INTRODUCTION

- What is CSS?
- Why Use CSS?
- CSS Syntax

### MODULE 2: CSS CORE PROPERTIES

- CSS Color
- CSS Backgrounds
- CSS Box Model
- CSS Borders
- CSS Margins
- CSS Paddings
- CSS Box Sizing

### MODULE 3: CSS UNITS

- Absolute Units
- Relative Units
- Max-Width
- Min-Width

### MODULE 4: CSS STYLING

- CSS Text
- CSS Fonts
- CSS Outline
- CSS Alignment
- Important

### MODULE 5: STYLING ELEMENTS

- Links
- Lists
- Dropdowns
- Tables
- Images
- Image-Sprite, Image-Filters
- Clip-Path
- Forms

### MODULE 6: NAVBAR

- Vertical-Navbar
- Horizontal-Navbar

### MODULE 7: CSS SELECTORS

- Simple Selectors



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- Combinator selectors
- Pseudo-class & elements selectors
- Attribute selectors

### MODULE 8: CSS POSITIONS

- Position
- Z-Index
- Float
- Clear
- Overflow

### MODULE 9: CSS LAYOUTS

- Display
- Block
- Inline
- Inline-Block
- Grid
- Flex-Box

### MODULE 10: CSS TRANSFORMATION

- CSS 2D & 3D Transforms
- CSS Transition
- CSS Animations

### MODULE 11: CSS RESPONSIVE

- Responsive Introduction
- Responsive Viewport
- Responsive Breakpoint
- Media Queries

## JAVASCRIPT

### MODULE 1: INTRODUCTION

- What is JavaScript?
- Why Use JavaScript?
- Syntax
- Statements
- Comments

### MODULE 2: LANGUAGE SYNTAX

- Data Types
- Variable Declarations
- Var vs. Let
- Constant
- Dynamic Type
- Type of
- Type Conversion
- Objects
- Arrays

### MODULE 3: OPERATORS

- JavaScript Operators.
- Arithmetic Operators
- Assignment Operators
- Comparison Operators
- Equality Operators
- Ternary Operators
- Logical Operators
- Bitwise Operators

### MODULE 4: CONTROL STATEMENT

- if
- else
- if/else
- switch/case

### MODULE 5: LOOP STATEMENT

- for
- for/in
- for/off
- while
- do/while
- Infinite loop
- Break, Continue

### MODULE 6: JAVASCRIPT HTML DOM

- HTML Document object Model



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- DOM Methods
- DOM Documents
- DOM Elements
- DOM HTML
- DOM Forms
- DOM CSS
- DOM Events
- DOM Event Listener
- DOM Navigation
- DOM Nodes
- DOM Collections
- DOM Node Lists

### MODULE 7: JAVASCRIPT HTML BOM

- HTML Browser object Model
- JS Window
- JS Screen
- JS Location
- JS History
- JS Navigator
- JS Popup Alert
- JS Timing
- JS Cookies

### MODULE 8: ARRAY

- Array Introduction
- Adding Element
- Deleting Element
- Modifying Element
- Searching Element
- Emptying Element
- Combining Array
- Slicing Array
- Spread Operator
- Looping with Array
- Filtering with Array
- Mapping with Array
- Reducing an Array

### MODULE 9: FUNCTIONS

- Function Declarations.
- Hoisting
- Arguments
- The Rest Operators
- Default Parameters
- Getter and Setters
- Try and Catch
- Local vs. Global Scope
- this keyword

### MODULE 10: OBJECTS

- Basics
- Factory Functions
- Constructor
- Dynamic Nature of Object
- Functions are Objects
- Value vs. Reference Type
- Enumerating Properties of an Object
- Cloning an Object
- String
- Date

### MODULE 11: BUILT-IN OBJECTS

- Number
- Math
- String
- Array
- Date
- Boolean
- Regex

### MODULE 12: EVENTS

- Introduction
- Mouse Events
- Keyboard Events
- Form Events
- Document/Window Events



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### MODULE 13: INTRODUCTION TO OOP CONCEPT

- Prototype, Module pattern
- Augmenting type
- Closure
- ES6 Introduction
- Let & Const
- Arrow Functions
- Class
- Inheritance
- Rest and Map Operators
- Export
- Import
- Modules

### MODULE 14: JAVASCRIPT WEB API

- API Introduction
- Forms API
- History API
- Storage API
- Worker API
- Fetch API
- Geolocation API

### MODULE 15: JAVASCRIPT AJAX

- AJAX Introduction
- AJAX XMLHttpRequest
- AJAX Request
- AJAX Response

### MODULE 16: JAVASCRIPT JSON

- JSON Introduction
- JSON Syntax
- JSON Data Types
- JSON Parse
- JSON Stringify
- JSON Objects
- JSON Arrays

## JQUERY

- Getting started with jQuery
- Selecting elements
- Manipulating the page
- Traversing the DOM and chaining
- jQuery Utility Methods
- Handling events and event delegation
- AJAX, JSON and Deferred
- Enhancing with Animation effects
- Grids, Tables with AJAX, Pagination, jQuery UI
- jQuery Best Practices

## BOOTSTRAP 5

### MODULE 1: INTRODUCTION

- Introduction
- Quick Styles After Dark
- Our First Web Page
- What's inside?
- Scripts & Styles
- Core concepts
- Summary

### MODULE 2: LAYOUT WITH BOOTSTRAP

- Introduction
- Grid Layouts
- Simple Layout
- Fixed Grids
- Fluid Grids
- Responsive Design
- Responsive Utilities
- Inspiration
- Summary

### MODULE 3: EVERYDAY BOOTSTRAP

- Introduction
- Typography



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- Tables
- Forms
- Buttons
- Images & Icons
- Summary

### MODULE 4: BOOTSTRAP COMPONENT

- Introductions
- Drop Down Menu
- Buttons with Menus
- Tabs & Pill
- The Navbars
- Heros, Badgets, Labels And media
- Summary

### MODULE 5: BOOTSTRAP AND JAVASCRIPT

- Introduction
- More Buttons
- Modals
- Tooltips And Popovers
- Carousel
- Summary

## GITHUB

- Real-Time environmental setup with GitHub

## REACT

### MODULE 1: INTRODUCTION OF JAVASCRIPT ES 5 AND ES6

- Basic JavaScript
- Object Based JavaScript
- Introduction to ES6
- JavaScript Helpers (for Each, filter, map, filter, every, some)
- String Literals
- DE structuring

- Rest parameters & spread operator
- Arrow function
- Default parameter
- Class: Inheritance, constructor
- Promise

### MODULE 2: INTRODUCTION TO REACTJS

- What React JS?
- Why use React JS?
- What is Single Page Application?
- Why SPA?
- React JS Version
- REACT DOM
- REACT VIRTUAL DOM

### MODULE 3: SET UP REACT JS ENVIRONMENT

- What is CLI: create-react-app project name
- Advantage using CLI
- How to debug React JS application.
- Installation CLI
- Install Node JS
- Install React JS
- Installation CLI
- Create a hello world example
- Create React JS Project
- Understanding of Folder Structure
- How to debug React JS application
- Introduction of Babel

### MODULE 4: BASIC FEATURES OF REACTJS AND COMPONENTS

- React Concepts
- JSX
- Render Elements
- Types of Components
- Class Components





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- Life Cycle Method of Class components
- Functional Components
- HOOKS in detail
- Use of HOOK
- What is state
- React Forms
- Components and Props
- State and Lifecycle Handling Events
- Practice on above topics

### MODULE 5: ROUTING WITH REACT ROUTER

- Setting Up React router
- Install/ Uninstall React router
- React Router Version 5
- React router Version 6
- Setting up react router
- Understand routing in single page applications
- Working with Browser Router components
- Configuring route with Route component
- Making routes dynamic using Route params
- Working with nested routes
- Navigating to pages using Link and Nav Link Component
- Redirect routes using Redirect Component

### MODULE 6: KEY FEATURES OF REACTJS

- Conditional Rendering
- Lists and Keys
- Forms

### MODULE 7: EVENT HANDLING IN REACT

- Understanding React event system
- Passing arguments to event handlers

### MODULE 8: WORKING WITH FORMS

- Controlled components
- Understand the significance to default Value Prop
- Using react ref prop to get access to DOM element

### MODULE 9: INTRODUCTION TO REDUX

- What is React Redux
- Why React Redux
- Redux Install and setup
- Actions
- Reducers
- Store
- High Order Component
- Understanding map State To Props and map Dispatch To Props Usage

### MODULE 10: REDUX ADVANCED

- Async Actions
- Middleware
- What is redux saga
- Install and set up redux saga
- Working with Saga helpers (Crud Operation)
- Sagas vs Promises

### MODULE 11: REACT WITH DESIGN FRAMEWORK

- Material UI for design
- Formic Validation

### MODULE 12: REACT API'S

- Introduction https Request
- Introduction Axios NPM
- Introduction Slider NPM
- Integration of any NPM modules
- Introduction of Google Map NPM



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### NODE JS AND EXPRESS FRAMEWORK

#### MODULE 1: INTRODUCTION TO NODE.JS

- Introduction to Node.js
- History of Node.js
- Introduction to io.js
- What is Node.js Foundation
- V8 Java Script Engine
- Why Server Side Java Script ?

#### MODULE 2: GETTING STARTED WITH NODE.JS

- Node.js Architecture
- JavaScript Event Loop
- Node.js vs. others Server-Side Frameworks
- Node.js Application Area
- Advantages of Node.js
- Limitations of Node.js

#### MODULE 3: JAVASCRIPT WITH NODE.JS

- Writing Asynchronous Code
- Blocking vs. Non-Blocking Code

#### MODULE 4: MODULES

- Understanding Modules
- Built-In Modules
- Creating Module
- Exporting Module
- Importing Modules Node.js CLI and NPM
- Understanding CLI
- Node's Package Manager: NPM
- Local Packages
- Global Packages
- Installing, Updating and Removing Module using NPM
- Understanding package. Son file

#### MODULE 5: NODE.JS PACKAGE AND PUBLISHING

- Creating a Node Package
- Publishing Package
- Using published package

#### MODULE 6: PACKAGES

- Introduction of NPM Package
- Express NPM Package
- Multer NPM Package
- Node Mail NPM Package
- Boot Stripe NPM Package integration
- JSONWEBTOKEN NPM Integration
- Introduction of crypto-JS

#### MODULE 7: CODE DEBUGGING

- Built-In Debugger
- Node Inspector
- IDE Debuggers

#### MODULE 8: EXCEPTIONS HANDLING

- Try. Catch
- Call back
- Event Emitters

#### MODULE 9: EVENTS

- Understanding Events
- Event Emitter class
- Emitting Event, Listening Event

#### MODULE 10: STREAMS

- Creating streams
- Streams types
- Readable Stream
- Writable Stream
- Stream Pipe
- Creating Buffer
- Buffer decoding





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### MODULE 11: FILE SYSTEM AND PATH MODULE

- Introduction to fs Module
- The fs modules operations
- Manipulating Files Create, Open, Read, Write, Close, Rename, Delete
- Manipulating Directives Create, Read, Remove
- The path Module
- Building a Web server
- HTTP Request Methods, Headers
- Response Codes and Headers

### MODULE 12: EXPRESS FRAMEWORK

- Understanding Express
- Installing Express
- Creating and Running Express App

### MODULE 13: ROUTING AND VIEW ENGINES

- Router Object
- Router Object Methods
- View Engine -Handlebars
- Response Methods

### MODULE 14: MIDDLEWARE AND REQUEST PROCESSING

- Middleware
- Express Middleware
- Express Request Processing

## MONGODB

### MODULE 1: UNDERSTANDING NOSQL DB

- NoSQL vs. SQL DB

- Understanding Mongo DB
- Introduction of mongoose Atlas
- MongoDB Data types
- MongoDB Shell Commands
- Understanding db, collection & document
- Understanding Embedded documents
- Querying database Tools & API
- MongoDB Tools
- Introduction to Mongo Chef
- Mongo Chef for database operations

### MODULE 2: INDEXING AND RELATIONSHIPS

- Types of Indexes
- Creating & Dropping an Indexes
- Defining Relationships between Documents

### MODULE 3: MONGO DB ODM -MONGOOSE AND POSTMAN

- Introduction to Mongoose
- Exploring fundamentals of Mongoose
- Mongoose Models
- Mongoose Data Types & Relationships
- Mongoose CRUD operations

### REST API WITH MONGOOSE, MONGODB AND POSTMAN

### CREATING REST API USING EXPRESS AND MONGOOSE

### IMPLEMENTING THE PROJECT DEPLOYMENT OF MEAN APPLICATION