



Course Name: Full Stack Web Development Professional Certification Program

Course Overview:

Our Full Stack Web Development program is a meticulously designed program tailored to provide professionals with a comprehensive skill set in both front-end and back-end web development. This course combines industry-relevant technologies and frameworks to ensure participants acquire a holistic understanding of full-stack development.

The program begins with a deep dive into foundational web technologies, covering HTML and CSS for effective web page structuring and styling. Participants will then progress to Bootstrap, mastering responsive design principles to create adaptable and visually appealing websites.

In the realm of dynamic web development, JavaScript (JS) and jQuery are introduced, enabling participants to craft interactive web elements, manage events, and manipulate the Document Object Model (DOM) proficiently.

The backend development module of the program focuses on PHP, a versatile server-side scripting language, integrated seamlessly with MySQL for robust database management. Participants will gain expertise in PHP syntax, control structures, functions, and database operations, laying a solid foundation for server-side web development.

In addition to these core technologies, the program offers specialized training in two modern full-stack frameworks: MEAN (MongoDB, Express.js, Angular, Node.js) and MERN (MongoDB, Express.js, React, Node.js). These stacks empower participants to build scalable, efficient, and modern web applications, reflecting industry best practices.

Practical application is a cornerstone of this program, emphasized through four comprehensive projects that span across various modules. These projects are designed to simulate real-world scenarios, allowing participants to integrate and apply their acquired knowledge effectively, thereby building a robust professional portfolio.

Upon completion of this Full Stack Web Development program, participants will possess expertise in HTML, CSS, Bootstrap, JavaScript, jQuery, PHP, as well as MEAN and MERN stacks. Designed for professionals aiming to advance their career in web development, this program offers a structured and comprehensive pathway to becoming a skilled full-stack web developer in a professional setting.

What You'll Learn?

Upon completion of this Full Stack Web Development program, participants will possess expertise in HTML, CSS, Bootstrap, JavaScript, jQuery, PHP, as well as MEAN and MERN stacks.



Duration: 186 hours

1. Html, CSS, Bootstrap, JS, jQuery, PHP (92 hours)
2. 4 Project (12 hours)
3. MEAN and MERN Stack (82 hours)

Requirements:

Html, CSS, Bootstrap, JS, jQuery, PHP, MEAN and MERN Stack

Pre-requisite:

No pre-requisite

Curriculum

Module 1. Hyper Text Markup Language (HTML5)

1. Introduction to HTML

- Understanding what HTML is and its role in web development

2. HTML Basics

- Learning the basic structure of HTML documents

3. HTML Elements

- Understanding various HTML elements like <div>, , <a>, etc.

4. HTML5 Semantic

- Introduction to semantic elements like <header>, <footer>, <article>, <section>, etc. introduced in HTML5

5. HTML Attributes

- Learning about HTML attributes and how to use them

6. HTML Headings

- Using heading tags <h1> to <h6> in HTML

7. HTML Paragraph

- Using paragraph tags <p> in HTML

8. HTML Styles

- Applying inline styles using the style attribute

9. HTML Formatting

- Learning about formatting tags like , , <mark>, etc.

10. HTML Quotations

- Using quotation tags like <blockquote> and <q>

11. HTML Computer Code

- Displaying computer code using <code> and <pre> tags

12. HTML Comments & Colors

- Adding comments to HTML code and using color values

13. HTML CSS, Links and Images

- Linking external CSS, adding images, and creating hyperlinks

14. HTML Lists

- Creating ordered `` and unordered `` lists in HTML

15. HTML Blocks

- Understanding block-level and inline elements in HTML

16. HTML Classes

- Using classes to style HTML elements with CSS

17. HTML Layout

- Learning about basic page layout techniques using HTML elements

18. HTML Responsive

- Introduction to responsive design principles with HTML

19. HTML iframes

- Embedding external content using `<iframe>` tags

20. HTML JavaScript

- Including JavaScript in HTML documents

21. HTML Head

- Understanding the `<head>` section and its importance in HTML documents

Module 2. Cascading Style Sheet (CSS)

1. Introduction to CSS3

- Understanding what CSS is and its role in web development

2. CSS3 Syntax

- Learning the basic syntax and structure of CSS3

3. CSS3 How To

- Getting started with applying CSS styles to HTML elements
- 4. CSS3 Colors
 - Using color values and understanding color properties in CSS3
- 5. CSS3 Backgrounds
 - Applying background colors, images, and gradients
- 6. CSS3 Borders
 - Styling borders using various properties and values in CSS3
- 7. CSS Padding
 - Understanding and applying padding to elements
- 8. CSS Height/Width
 - Setting and understanding height and width properties
- 9. CSS3 Gradients
 - Creating gradient backgrounds using CSS3
- 10. CSS3 Shadows
 - Applying box shadows and text shadows
- 11. CSS3 Text
 - Styling text properties like font, size, weight, and alignment
- 12. CSS3 Fonts
 - Using custom fonts and font properties in CSS3
- 13. CSS3 2D Transforms
 - Applying 2D transformations like translate, rotate, scale, and skew
- 14. CSS3 3D Transforms
 - Applying 3D transformations in CSS3
- 15. CSS Links
 - Styling hyperlinks and link states

16. CSS Lists

- Styling ordered and unordered lists

17. CSS Tables

- Styling table elements and their properties

18. CSS Box Model

- Understanding the box model and its properties

19. CSS Outline

- Applying outlines to elements

20. CSS Display

- Understanding and applying display properties

21. CSS Max-width

- Setting maximum width for responsive design

22. CSS Position

- Understanding positioning methods like static, relative, absolute, and fixed

23. CSS Float

- Using float for layout design

24. CSS Inline-block

- Using inline-block for layout design

25. CSS Align

- Aligning elements using various properties

26. CSS Combinators

- Understanding and using CSS combinators

27. CSS Pseudo-class

- Using pseudo-classes to style elements based on state

28. CSS Pseudo-element

- Using pseudo-elements to style specific parts of elements

29. CSS Navigation Bar

- Creating and styling navigation bars

30. CSS Dropdowns

- Creating dropdown menus with CSS

31. CSS Tooltips

- Creating tooltips using CSS

32. CSS3 Images

- Styling and positioning images using CSS3

33. CSS Attr Selectors

- Using attribute selectors in CSS

34. CSS Forms

- Styling form elements

35. CSS Counters

- Using counters in CSS for numbering

36. CSS3 Animations

- Creating animations using CSS3 keyframes

37. CSS3 Buttons

- Styling and designing buttons using CSS3

38. CSS3 Pagination

- Creating paginated content using CSS3

39. CSS3 Multiple Columns

- Creating multi-column layouts using CSS3

40. CSS3 User Interface

- Styling form elements and other UI components



41. CSS3 Box Sizing

- Understanding the box-sizing property

42. CSS3 Filters

- Applying image filters using CSS3

43. CSS3 Media Queries

- Implementing media queries for responsive design

44. CSS3 Responsive

- Implementing responsive design techniques using CSS3

Module 3. Bootstrap

1. Introduction to Bootstrap

- Understanding what Bootstrap is and its role in web development

2. Bootstrap Basics

- Learning the basic structure, classes, and utilities of Bootstrap

3. Bootstrap Grids

- Understanding the Bootstrap grid system for responsive layout design

4. Bootstrap Themes

- Exploring Bootstrap themes and customization options

5. Bootstrap CSS

- Learning and applying Bootstrap CSS classes for styling

6. Bootstrap JS

- Understanding and implementing Bootstrap JavaScript functionalities like modals, tooltips, carousels, etc.

Module 4. JavaScript

1. Introduction to JavaScript

- Understanding what JavaScript is and its role in web development

2. JavaScript Language Basics

- Learning basic syntax, variables, data types, and operators

3. JavaScript Objects

- Understanding object-oriented programming in JavaScript and creating objects

4. JavaScript Scope

- Understanding variable scope (local vs. global) and function scope

5. JavaScript Events

- Handling events and event listeners in JavaScript

6. JavaScript Strings

- Manipulating and working with string data

7. JavaScript Numbers

- Understanding number data types and math operations

8. JavaScript Math

- Using built-in Math object for mathematical operations

9. JavaScript Arrays

- Working with arrays, array methods, and iterating through arrays

10. JavaScript Boolean

- Understanding boolean data type and logical operators

11. JavaScript Comparisons

- Comparing values using equality and relational operators

12. JavaScript Conditions

- Using if, else if, and else statements for conditional logic

13. JavaScript Switch

- Using switch statements for multi-way branching

14. JavaScript Loops

- Understanding for, while, and do-while loops

15. JavaScript Type Conversion

- Understanding automatic and explicit type conversion

16. JavaScript RegExp

- Working with regular expressions for pattern matching

17. JavaScript Errors

- Handling errors using try, catch, and finally blocks

18. JavaScript Debugging

- Using browser developer tools for debugging JavaScript code

19. JavaScript Hoisting

- Understanding variable and function hoisting

20. JavaScript Strict Mode

- Enabling strict mode for better error handling and code quality

21. JavaScript Functions

- Writing functions, function expressions, arrow functions, and understanding scope and closures

22. JavaScript Objects

- Deeper dive into objects, methods, and prototypes

23. JavaScript Forms

- Handling form inputs and validation using JavaScript

24. JavaScript HTML DOM

- Manipulating HTML elements and attributes using the Document Object Model (DOM)

25. JavaScript BOM

- Understanding the Browser Object Model (BOM) and its properties

Module 5. jQuery

1. Introduction to jQuery

- Understanding what jQuery is and its role in web development

2. jQuery Syntax

- Learning the basic syntax and structure of jQuery

3. jQuery Selectors

- Understanding and using various selectors to target DOM elements

4. jQuery Events

- Handling events and event listeners using jQuery

5. jQuery Effects

- Applying visual effects like show/hide, fade, slide, animate, etc., using jQuery

6. jQuery HTML

- Manipulating HTML content and attributes using jQuery

7. jQuery Traversing

- Navigating and manipulating the DOM tree using traversal methods

8. jQuery AJAX & Misc

- Understanding AJAX methods for asynchronous data retrieval and miscellaneous functionalities like utility functions, callbacks, chaining, etc.

Module 6. PHP & MySQL

Part 1: PHP Crash Course

1. Using PHP

- Understanding PHP syntax and basic structure

2. Embedding PHP in HTML

- Integrating PHP code with HTML

3. Adding Dynamic Content

- Generating dynamic content using PHP

4. Accessing Form Variables

- Retrieving and handling form data in PHP

Part 2: Storing and retrieving data



1. Opening a file

- Reading and writing to files using PHP

2. Writing a File

- Writing data to files

3. Closing a File

- Closing file handles

4. Reading from a File

- Reading data from files

Part 3: Using Arrays

1. Numerically Indexed Array

- Understanding and using numerically indexed arrays

2. Associative Arrays

- Working with associative arrays

3. Sorting Arrays

- Sorting arrays using built-in functions

4. Recording Arrays

- Using multidimensional arrays

Part 4: String Manipulation and Regular Expressions

1. Formatting Strings

- Formatting string output

2. Joining and Splitting Strings

- Using string functions to join and split strings

3. Comparing Strings

- Comparing string values

4. Matching and Replacing Substrings

- Using regular expressions for matching and replacing substrings

Part 5: Reusing Code and Writing Functions

1. Using require() and include()

- Including and requiring PHP files

2. Using Functions

- Creating and using functions

3. Parameters

- Passing parameters to functions

4. Recursion

- Understanding and implementing recursion

Part 6: Object-Oriented PHP

1. Object-Oriented Concepts

- Understanding OOP concepts in PHP

2. Implementing Inheritance

- Creating and using inheritance in PHP

Part 7: MVC with Laravel

1. Laravel Installation

- Installing Laravel framework

2. Working with Forms

- Handling forms in Laravel

3. Working with Controller

- Understanding and using controllers

4. Laravel Blade Template with Bootstrap

- Integrating Blade templates and Bootstrap

5. Responses with Html

- Using HTML responses in Laravel

6. Laravel Migration

- Database migrations in Laravel

7. Laravel Requests, Models

- Working with requests and models in Laravel

8. Laravel Eloquent ORM

- Understanding and using Eloquent ORM

9. Build a Complete App in Laravel

- Building a complete web application in Laravel

Part 8: Designing your web database

1. Relational Database Concepts

- Understanding relational database concepts

2. How to Design Your Database & Web

- Designing web databases

3. Database Architecture

- Understanding database architecture

Part 9: Creating your web database

1. Creating Databases and Users

- Creating databases and users in MySQL

2. Introduction to MySQL' Privilege System

- Understanding MySQL privileges

3. Setting Up a User for the Web

- Setting up a user for web applications

4. Creating Database Tables

- Creating tables in MySQL

Part 10: Working with your MySQL database

1. Inserting, Retrieving and Updating Data
 - Performing CRUD operations in MySQL
2. Altering Tables after Creation
 - Modifying table structures

Part 11: Accessing your MySQL Database from the web with PHP

1. How Web Database Architectures Work
 - Understanding web database architectures
2. Checking and Filtering Input Data
 - Validating and sanitizing input data
3. Setting Up a connection & Querying the Database
 - Establishing database connections and executing queries

Module 7. MEAN and MERN Stack

Angular (TypeScript)

1. Introduction to Angular
 - Understanding the basics and architecture of Angular
2. Angular Application Architecture
 - Understanding Angular modules, components, and services
3. What is NgModule
 - Understanding Angular modules
4. Angular Components
 - Creating and using components in Angular
5. Angular Templates
 - Creating templates using Angular syntax
6. Data Binding

- Understanding data binding and its types

7. Types of Data Binding

- Exploring one-way and two-way data binding

8. Modules Component Working

- Working with Angular modules and components

9. Directives

- Using directives in Angular

10. Structure Directives

- Understanding and using structure directives like ngIf, ngFor, etc.

11. Template Routing

- Setting up and configuring routing in Angular

12. Theme Implementation in Angular Framework

- Customizing and theming Angular applications

13. Angular Forms

- Working with forms in Angular

14. Services

- Creating and using services in Angular

15. Inject Services

- Injecting services into components

16. Angular Server Communication With Backend Server

- Making HTTP requests to a backend server

17. Working of APIs(GET, POST, PUT, DELETE)

- Understanding and working with HTTP methods

18. Complete Web Application in Angular Framework - 4 hours

- Building a complete web application using Angular

Node.js

1. Introduction to Node.js

- Understanding Node.js and its architecture

2. Architecture of Node.js Application

- Understanding Node.js application structure

3. Synchronous and Asynchronous Programming

- Understanding synchronous and asynchronous programming in Node.js

4. Callback Function in Node.js

- Working with callback functions

5. Promises in Node.js

- Understanding and working with promises

6. MongoDB with Node.js

- Connecting and interacting with MongoDB using Node.js

7. Design the Schema in Node.js

- Designing MongoDB schemas

8. Design the Rest API's(GET, POST, PUT, DELETE)

- Creating RESTful APIs using Node.js

9. JSON Web Token Authentication in Node.js

- Implementing JWT authentication

10. Create the Auth APP in Node.js

- Building an authentication app using Node.js

11. Create the E-commerce Backend

- Building a backend for an e-commerce application

12. Integrated Payment Gateway

- Integrating payment gateways with Node.js

Express.js

1. Express

- Understanding and setting up Express.js

2. Restful services

- Creating RESTful services using Express.js

3. Introducing Express

- Exploring Express.js basics

4. Building your First Web Server

- Setting up a basic web server with Express.js

5. Nodemon

- Using Nodemon for automatic server restarts

6. Environment Variables

- Managing environment variables in Express.js

7. Route Parameters

- Handling route parameters in Express.js

8. Handling HTTP GET Request

- Handling GET requests in Express.js

9. Handling HTTP POST Request

- Handling POST requests in Express.js

10. Calling Endpoints Using Postman

- Testing endpoints using Postman

11. Input Validations

- Validating input data in Express.js

12. Handling HTTP PUT Request

- Handling PUT requests in Express.js

13. Handling HTTP DELETE Request

- Handling DELETE requests in Express.js

14. Project- Build the Genres API - 4 hours

- Building a complete API using Express.js

MongoDB

1. Introduction to MongoDB (NoSQL)

- Understanding MongoDB and NoSQL databases

2. Collections in MongoDB

- Working with collections in MongoDB

3. Documents in MongoDB

- Creating and managing documents in MongoDB

4. Difference between MySQL and NoSQL

- Comparing MySQL and NoSQL databases

5. Inserting data into database

- Inserting data into MongoDB

6. Filter queries in MongoDB Database

- Querying data using filters in MongoDB

7. Schema Validation in MongoDB database

- Validating schema in MongoDB

8. Indexing in collections

- Indexing fields in MongoDB collections

9. Aggregation in MongoDB

- Using aggregation framework in MongoDB

10. Embedded Document in MongoDB

- Working with embedded documents in MongoDB

ReactJS

1. Introduction to ReactJS
 - Understanding the basics and benefits of ReactJS
2. Understand ReactJS Library & Directory
 - Exploring ReactJS library and project directory structure
3. React Components
 - Understanding and creating React components
4. Types of Components
 - Functional components vs Class components
5. Build a simple React component
 - Building a basic React component from scratch
6. Component composition
 - Composing components together
7. Component styling
 - Styling React components
8. Add styles to your components
 - Adding CSS styles to React components
9. Component intercommunication
 - Communicating between React components
10. How to pass data from one component to another
 - Prop drilling and context API
11. Routing
 - Setting up routing in React applications
12. Using Routing to create single-page app
 - Creating single-page applications using React Router

13. Hooks

- Understanding React Hooks and their usage

14. States

- Managing component state

15. Hooks vs States

- Comparing Hooks and States

16. Types of Hooks

- Exploring useState, useEffect, useContext, etc.

17. Redux

- Understanding Redux and its principles

18. Using Redux as a state container for React apps

- Integrating Redux with React applications

19. React Bootstrap

- Integrating Bootstrap with React applications

20. How to deploy ReactJS App

- Deploying React applications to platforms like Netlify, Vercel, or GitHub Pages