

**Course Name:** Full Stack Web Development - HTML5, CSS3, JS, Bootstrapping, PHP with MySQL

**Overview:**

A **Full Stack Web Developer** is a software expert proficient in both **frontend** (client-side) and **backend** (server-side) development. Full Stack Developers are familiar with each layer of the tech stack that contributes to building a software product. This course is designed to equip you with the skills necessary to design and develop both static and dynamic web applications, and it provides hands-on experience working with modern technologies like **HTML5, CSS3, JavaScript, Bootstrapping, PHP** and **MySQL**.

This course offers:

- A strong foundation in **web development** concepts.
- Comprehensive, topic-wise tutorial materials.
- A highly qualified and experienced technical team to guide each trainee.
- Small batch sizes for a focused, personalized learning experience.

**Prerequisites:**

- Basic computer knowledge.
- A basic understanding of **HTML** and programming concepts will be helpful.
- A willingness to learn, improve, and compete with the best.
- Curiosity to dive deeper into coding and problem-solving.

**Key Learning Outcomes:**

Upon completion of this course, you will be able to:

- Design and develop **static web applications**.
- Build **dynamic web applications** using backend technologies.
- Create and deploy **responsive web applications** that work across devices and screen sizes.
- Solve complex problems in web development using new and innovative approaches.
- Write clean, bug-free code that adheres to best practices.

**Target Audience:**

This course is ideal for:

- Students aiming to be hired by top-tier IT companies such as **TCS, Infosys, Microsoft, Samsung, Google, Amazon, Facebook, Wipro**, and other leading MNCs.
- Students looking to become **Full Stack Web Developers**.
- **B.Tech, MCA, BCA, B.Sc IT, M.Tech** students, and **working professionals** interested in upgrading their skills.

**Test & Evaluation:**

- Participants are required to complete all assignments throughout the program for better learning.
- A **final assessment** will be conducted at the end of the program.

**Certification:**

- Successful participants will receive a **Certificate of Completion**.
- Participants will also receive a Project Letter upon successful completion of the Project.
- Students who leave the course midway or fail to complete it will not be awarded a certificate.

**Delivery Mode & Duration:**

- **Online Live Mode:** 120 Hours (60 Hours of Classroom Sessions + 60 Hours of Assignments)

## **Topics to be covered:**

### **Module 1: Web Development Introduction**

- Introduction
- What is Server? Discuss LAMP/WAMP/XAMP?
- Difference between global server and local server?
- Configuration of local server.
- Role of http over the network/Internet.
- Terminologies
  - Web client
  - Web server
  - Web browser
  - Webpage
  - Website
- Discuss Client server architecture.

### **Module 2: HTML**

- **HTML Basics**
  - Understand the structure of a HTML page.
  - Understanding HTML Elements.
  - Creating and saving first web page.
  - Defining the title on webpage.
  - Showing the icon on webpage.
  - Use of HTML Attributes.
  - Syntax to use attribute in HTML.
  - Using background image.
  - Defining marquee in HTML
  - Empty HTML element.
  - Creating horizontal line.
- **Text and link on web page**

- Discussion on font formatting
- Creating Headings in HTML.
- Creating and styling Paragraphs.
- Using different color coding.
- Comments in HTML
- Linking webpages using hyperlink
- Creating different types of hyperlink
- Creating image on webpage.
- **HTML Tables and basic layout**
  - Showing data in tabular form.
  - Creating tabular data in different format.
  - Discussion on different properties of table and its impact
  - Formatting on table.
  - Initial layout management of website using table.
  - Discussion on div and span.
- **HTML Lists**
  - Creating list on web page to show the details of product.
  - Creating different types of List.
  - Properties of numbered list.
  - Properties of bulleted list
  - Creating HTML description Lists
- **HTML Forms**
  - Discussion on form
  - Attribute related to form
  - Method of posting form on to server.
  - Discussion on binary data posting
  - Creating textbox, checkbox, radio button etc. control.
  - Differentiation between checkbox, radio button and drop down list.
  - Discussion on taking long text from user like feedback, address etc.

## **Module 3: CSS**

- **CSS Basics**
  - Introduction of CSS.
  - Advantage of using CSS over the HTML.
  - Properties and its value in CSS.
  - Ways to use CSS.
  - Why external CSS.
  - Comment in CSS.
- **Selectors in CSS**
  - Discussion on selector.
  - Different type of selector
  - Tag selector
  - Defining and using multi selector.
  - Defining and using class selector
  - Multiple classes on particular tag.
  - Defining and using id selector.
  - Defining and using universal selector.
  - Why universal selector.
  - Defining and using attribute selector.
  - Use and advantage of using pseudo-class.
  - Defining nested selector.
  - Discussion on Pseudo element
- **Text formatting using CSS**
  - Defining the color, size of text.
  - Discussion on different measurement unit.
  - Removing underline from hyperlink.
  - Use of text transformation.
  - Creating text shadow.
- **Page formatting using CSS**
  - Defining the background.
  - Managing image in background.
  - Managing layout of page using position.

- Differentiate absolute, relative and fixed layout.
  - Defining margin and padding.
  - Setting individual margin and padding on page.
  - Create transparent box.
- **Table formatting using CSS**
  - Defining the separate and collapse border.
  - Managing image in background.
  - Generate different structure of table.
  - Create table striped.
- **Border formatting using CSS**
  - Defining border width
  - Define the individual border width.
  - Defining different kind of border style
  - Define the individual border style.
  - Defining border color
  - Define the individual border color.
  - Defining the radius of border.
- **List formatting**
  - Setting list style
  - Showing image as an list
  - Positioning list.
  - Creating navigation bar.
  - Generating different view of navigation bar.

## **Module 4: JavaScript**

- Introduction of JavaScript
- Basic of java script
- Function in java script
- Java script event handling

- Object in java script
- String in java script
- Number in java script
- Array in java script
- Error object in java script
- Type conversion in java script
- Form control in java script

- **DOM**

- Introduction of DOM.
- Discuss DOM over the java script.
- Ways to access HTML element using DOM.
- Accessing style using DOM.
- Add event listener using DOM.
- Add event handler to an element.
- Remove event listener.
- Create new HTML element using DOM.
- Remove HTML element using DOM.
- Discuss collection object.

→ • **Introduction to Ajax**

- Introduction to AJAX
- Introduction to XMLHttpRequest Object
- Method and Properties of XMLHttpRequest
- Implementation of Ajax techniques on webpages

## Module 5 Responsive design using Bootstrap

→ • **Introduction of bootstrap**

- Introduction of bootstrap.
- Discussion of responsive websites.
- Discussion on different size of screen.
- Difference between bootstrap3 and bootstrap4.
- Discussion on different container and its limitations.
- Ways to use bootstrap.
- Discussion on CDN over downloaded version.

→ • **Layout management in bootstrap**

- Managing layout of webpage using bootstrap.
- Differentiate container and container-fluid class.
- Creating and manipulating sections in container.
- Generating responsive text on webpage.

• **Text in bootstrap**

- Discussion on size of different heading in bootstrap.
- Generating lighter and secondary text in bootstrap.

- Discussion on block quotes, description list, code snippets etc.
- Different text formatting in bootstrap.
- Generating contextual text color and background in bootstrap.

#### · **Table in bootstrap**

- Showing records in tabular format with basic styling.
- Showing striped style on bootstrap table.
- Showing bordered table and also apply hover format.
- Contextual classes on table.
- Generating responsive web site.

#### · **Icons in bootstrap**

- Discussion on glyphicon.
- Use of glyphicon over normal text.
- Limitation of glyphicon.
- Showing icons on form controls like user, lock etc.

#### · **Pagination in bootstrap**

- Discuss pagination. Why it required.
- Creating pagination with active link.
- Showing pagination with different sizes.
- Showing current page's location within a navigational hierarchy.

#### · **Modal in bootstrap**

- Understanding modal.
- Create and open modal.
- Different classes used for modal.
- Defining the size of modal.
- Showing login and registration page on modal.

#### · **Image in bootstrap**

- Creating responsive image.
- Defining the rounded image.
- Creating circle image.
- Creating thumbnail image.
- Image with caption.
- Creating responsive video with scale to parent element.
- Image with media class.
- Defining alignment of media object.
- Showing nested media object.

#### · **Button in bootstrap**

- Generate different style of button.
- Generate different size of button in bootstrap.
- Mean of large button, small button and block level button.
- Using different state of button in bootstrap.

#### · **Button group in bootstrap**

- Creating horizontal button group.
- Horizontal button group with different sizes.
- Creating vertical button group.
- Defining justified button group.
- Nesting button and creating drop down.
- Defining different section in drop down.

#### · **Progress bar in bootstrap**

- Creating progress bar in bootstrap.
- Showing progress bar with label
- Progress bar with different color.
- Create striped progress bar.
- Create animated progress bar.
- Create stacked progress bar.



### **Alert message in bootstrap**

- Generating different types of alert message.
- Generating different types of alert message as link.
- Generating different type of alert message with close button.
- Generating different type of alert message with animation.

### **Badges and Spinner in bootstrap**

- What do you mean by badges?
- Generating different types of badges.
- Badges with contextual classes.
- What do you mean by Spinner
- Creating different size and types of Spinner

### **Panel and collapsible panel in bootstrap**

- What do you mean by panel?
- Panel with heading.
- Panel with footer.
- Create panel group.
- Panel with contextual class.
- Create basic collapsible.
- Create collapsible panel.

### **List group in bootstrap**

- Creating list group.
- List group with badges.
- Creating active list in list group.
- Showing list group with link.
- Showing disabled item in list group.
- List group item with contextual classes.
- List group with custom content.

- List group in collapsible panel.

### **Pager in bootstrap**

- Using pager class with list.
- Aligning link in page.

### **Menu and navigation bar in bootstrap**

- Creating menu as tab and pills.
- Differentiating tab and pills.
- Creating tabs as drop down menu.
- Showing horizontal and vertical pills.
- Creating pills with drop down menu.
- Showing centered tabs and pills.
- Creating toggleable tabs.
- Creating dynamic tabs.
- Creating toggleable pills.
- Creating dynamic pills.
- Creating navigation bar.
- Defining inverted navigation bar.
- Designing navigation bar with drop down menu.
- Aligning menus in navigation bar.
- Creating fixed navigation bar.
- Create collapsing navigation bar in bootstrap.

### **Form in bootstrap**

- Creating form.
- Discussion on form control default setting.
- Creating form with different layout.
- Discussion on default layout of form.
- Creating text box in bootstrap.
- Taking long string in text area.

- Checkbox and radio button in bootstrap.
- Creating drop down list.
- Grouping input control on form.
- Creating static control on form.
- Using state of control on form.
- Showing text box in different size.
- Showing help text with form controls.

### **Carousel in bootstrap**

- What do you mean by carousel?
- Creating carousel.
- Discussion of different carousel classes.
- Defining carousel with caption.

## **Module 6: PHP**

### **● Introduction**

- Introduction to PHP.
- History of PHP.
- Why PHP?
- Discuss web server, also discuss LAMP/WAMP/XAMP.
- Environment step up and its requirement.
- Discuss about IP and port number.
- Discuss configuration related to service issue.
- Introduction of PHP interpreter.
- Execution of PHP script.

### **● PHP Basics**

- How to write PHP script.
- Displaying message using PHP.
- Saving and running first code.
- Difference between echo and print.

- Discuss comments in PHP.
- What do you mean by PHP identifier?
- Naming convention of identifier in PHP.
- Discussion on PHP variable type.
- Displaying output in various formats.
- Concatenation operator in PHP.
- String in single quotation and in double quotation.
- What is type juggling?
- Showing the type of variables.
- Creating and accessing constant in PHP.
- Difference between constant and variable.
- Demonstration and discussion on magic constant in PHP.
- **Operators in PHP**
  - What do you mean by operator?
  - Types of operators.
  - Discuss operators on the basis of number of operand.
- **Decision making**
  - What do you mean of selection construct or decision making construct.
  - Explanation and demonstration on if-else, nested-if and else if ladder.
  - Discuss and demonstrate switch-case.
- **Looping**
  - What do you mean by loop?
  - Different looping statement in PHP.
  - Demonstration on while, do-while, for and foreach loop in PHP.
  - Discuss break and continue statement with demonstration.
- **Array**
  - What do you mean by array?
  - How PHP array different from array of other languages.
  - Discuss array function.
  - How many types of array available in PHP.
  - Discuss numerical array and associative array as multidimensional array.

- Demonstrate sorting in an array elements.
  - Discuss other function that manipulate or access array elements.
- **String**
  - What is string?
  - How many ways to define a string in PHP.
  - Differentiate implode and explode.
  - Demonstration on converting plain text into cipher text.
  - Finding the length of string.
  - Converting string in different cases.
  - Replacing string in PHP.
  - Comparing strings.
  - String repetition function and repetition operator.
  - Discuss various string related function.
- **Function**
  - What do you mean by function?
  - Types of function.
  - Creating user defined function.
  - Ways to create user defined function.
  - Local and global scope of variable.
  - Role of default argument in PHP function.
  - How to return multiple values from function.
  - Creating variable function in PHP.
  - Including and managing external static and dynamic resources.
  - Demonstrating built in functions.
- **Reusing Code in PHP**
  - include statement
  - include\_once statement
  - require statement
  - require\_once statement
- **File Handling**

- What is file? Differentiate file with directory.
- Why file is required?
- Opening and closing file in PHP.
- Discuss different mode of opening file.
- Writing file using PHP.
- Reading files in PHP.
- Removing and renaming files in PHP.
- Copy file content in PHP.
- Opening directory in PHP.
- Read the content from directory.
- Getting and changing directory.
- Creating and removing directory in PHP.
- File Uploading using PHP
- File Downloading using PHP

- **Form Handling**

- Discuss get and post method of form.
- Using \$\_GET[] and \$\_POST[] super global variable.
- Discuss use of \$\_REQUEST[].
- Discussion on binary data posting.
- Action attribute of form tag.
- Demonstration of sending form data on PHP script.
- Discussion on \$\_PHP\_SELF.
- Writing PHP script in same page.
- Validating control and showing error messages using PHP.

- **State management**

- What do you mean by state management?
- Discuss HTTP is stateless protocol.
- Discussion on request and response.
- What is query string? How we can use.
- Discuss the advantage and disadvantage of query string.
- Understanding session and cookie?

- Differentiate session and cookie.
- Demonstrate creation of session and how to remove it.
- Removing all created session in PHP.
- Advantage of using session in PHP.
- Discuss the role of session\_start().
- How to turn on session automatically.
- Discussion on default path and time of session.
- How get current session id.
- Discuss maximum data size PHP session can hold.
- Demonstration creating and removing session.
- Creating and removing cookies in PHP.
- Discussion of size of cookies.
- Types of cookies in PHP.
- Create login page with user credential.
- Demonstration on securing login.

#### **APIs in PHP**

- API basics: what APIs
- Create a RESTful API
- Use of RESTful API
- Introduction to Postman.
- Create and send API requests using Postman
- Test APIs using Postman

### **Module 7: Database Programming in PHP using MySQL**

#### **● Database**

- Introduction of database.
- Advantage of using database over file oriented approach.
- What do you mean by database?
- What do you mean by DBMS?
- Differentiate DBMS with RDBMS.
- Discuss terminologies used in RDBMS.
- What is SQL?
- What do you mean by DDL, DML, DQL statements?
- What do you mean by query?

- CRUD operation
- Step to connect with database.
- Differentiating mysql with mysqli.
- Demonstration to connect with server.
- Checking server connection.
- Showing record of table using PHP script.

### **Module 8: Project**

- Hands-on project to apply the concepts learned.
- Full-stack application development from frontend to backend.