

# FULL STACK WEB DEVELOPER COURSE SYLLABUS

## COURSE FLOW

Full Stack Web developer course starts with introducing participants with front-end technologies (ex: HTML5) and makes them develop responsive one page web application. Followed by that it deep dives into MEAN stack components and brings hands-on perspective to building scalable web applications by leveraging “JavaScript everywhere” phenomenon.

Throughout the course foundation paradigms are stressed to ensure participants clearly understand software engineering fundamentals and apply them.

## MODULE TOPICS

- Front-end (HTML5 | CSS3 | Bootstrap | JavaScript | jQuery | jQuery mobile)
- Foundation paradigms (OOPS | Design Patterns | Object Modelling | JSON | AJAX)
- MEAN Stack (MongoDB | Express Framework | AngularJS | Node.js)
- Data Exchange (HTTP | Websockets)
- Development Environment & Tools

## COURSE OBJECTIVES

- Enable participants to develop a complete web application from the scratch that includes Front-end, Backend and Data-exchange technologies.
- Build strong foundations (ex: OOPS) in entry level engineers thereby making them job ready as per industry requirements. Enable them to learn new technologies by applying foundation paradigms.
- By the end of the program participants will be become an industry-ready engineer who can be readily deployed in a project

## DELIVERY METHOD

Instructor-lead, Assignments with hands-on exercises backed with assignments and mini projects.

# FULL STACK WEB DEVELOPER COURSE - SYLLABUS

## FULL STACK WEB DEVELOPER

### COURSE SYLLABUS

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# Front-end Course Modules

## Hyper Text Mark-up Language (HTML5)

### Module Objectives:

- Building Strong expertise to develop front end application using HTML5
- Implement MVC and responsive design to scale well across PC, tablet and Mobile Phone

### Overview:

This course provides you hands-on experience and exposure to developing HTML5 based single page application for browsers. This course builds strong foundation on HTML5 which will help developer to use HTML5 concepts for building responsive web application.

### Delivery method:

Instructor lead, hands-on exercises backed with assignments and mini project

### Detailed Course Contents:

- Introduction HTML
- HTML Basics
- HTML Elements
- HTML5 Semantic
- HTML Attributes
- HTML Headings
- HTML Paragraph
- HTML Styles
- HTML Formatting
- HTML Quotations
- HTML Computer Code
- HTML Comments & Colours
- HTML CSS, Links and Images
- HTML Lists
- HTML Blocks
- HTML Classes
- HTML Layout
- HTML Responsive
- HTML iframes
- HTML JavaScript
- HTML Head
- HTML Entities and URI Code
- HTML Symbols and XHTML
- HTML Charset and Forms

## Cascading Style Sheets (CSS3)

### Module Objectives:

Building Strong expertise to develop front end application using CSS3 Implement MVC and responsive design to scale well across PC, tablet and Mobile Phone

### Overview:

This course provides you hands-on experience and exposure to developing CSS3 based web application. This course builds strong foundation on CS33 which will help developer to use CSS3 concepts for building responsive web application.

### Delivery method:

Instructor lead, hands-on exercises backed with assignments and mini project

### Detailed course contents:

- Introduction CSS3
- CSS3 Syntax
- CSS3 How To
- CSS3 Colours
- CSS3 Backgrounds
- CSS3 Borders
- CSS Padding
- CSS Height/Width
- CSS3 Gradients
- CSS3 Shadows
- CSS3 Text
- CSS3 Fonts
- CSS3 2D Transforms
- CSS3 3D Transforms
- CSS Links
- CSS Lists
- CSS Tables
- CSS Box Model
- CSS Outline
- CSS Display
- CSS Max-width
- CSS Position
- CSS Float
- CSS Inline-block
- CSS Align
- CSS Combinators
- CSS Pseudo-class
- CSS Pseudo-element
- CSS Navigation Bar
- CSS Dropdowns
- CSS Tooltips
- CSS3 Images
- CSS Attr Selectors
- CSS Forms
- CSS Counters
- CSS3 Animations
- CSS3 Buttons
- CSS3 Pagination
- CSS3 Multiple Columns
- CSS3 User Interface
- CSS3 Box Sizing
- CSS3 Filters
- CSS3 Media Queries
- CSS3 Responsive

## Bootstrap

### Module Objectives:

- To become proficient in Bootstrap concepts
- To develop a web pages based on Bootstrap

### Overview:

This course is targeted for fresh engineers or professional who want to build competency in the Bootstrap Based web development.

### Delivery method:

Instructor lead, hands-on exercises backed with assignments and mini project

### Detailed course contents:

- Introduction to Bootstrap
- Bootstrap Basics
- Bootstrap Grids
- Bootstrap Themes
- Bootstrap CSS
- Bootstrap JS

## JavaScript

### Module Objectives:

- Building Strong expertise to develop front end application using HTML5, CSS3 and JavaScript along with jQuery and AngularJS framework
- Implement MVC and responsive design to scale well across PC, tablet and Mobile Phone

### Overview:

This course provides you hands-on experience and exposure to develop JavaScript based web application. This course builds strong foundation of JavaScript which will help developer to apply JavaScript concepts for responsive web frontend and backend development.

### Delivery method:

Instructor lead, hands-on exercises backed with assignments and mini project

Detailed course contents:

- Introduction to JavaScript
- JavaScript Language Basics
- JavaScript Objects
- JavaScript Scope
- JavaScript Events
- JavaScript Strings
- JavaScript Numbers
- JavaScript Math
- JavaScript Arrays
- JavaScript Boolean
- JavaScript Comparisons
- JavaScript Conditions
- JavaScript Switch
- JavaScript Loops
- JavaScript Type Conversion
- JavaScript RegExp
- JavaScript Errors
- JavaScript Debugging
- JavaScript Hoisting
- JavaScript Strict Mode
- JavaScript Functions
- JavaScript Objects
- JavaScript Forms
- JavaScript HTML DOM
- JavaScript BOM

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## jQuery

### Module Objectives:

- Building Strong expertise to develop front end application using HTML5, CSS3 and JavaScript along with jQuery and AngularJS framework
- Implement MVC and responsive design to scale well across PC, tablet and Mobile Phone

### Overview:

This course provides you hands-on experience and exposure to develop jQuery Mobile based responsive web application. It builds strong foundation of jQuery which will help developer to apply concepts for responsive web frontend development.

### Delivery method:

Instructor lead, hands-on exercises backed with assignments and mini project

### Detailed course contents:

- Introduction to jQuery
- jQuery Syntax
- jQuery Selectors
- jQuery Events
- jQuery Effects
- jQuery HTML
- jQuery Traversing
- jQuery AJAX & Misc

**Module Objectives:**

- Building Strong expertise to develop front end application using HTML5, CSS3 and JavaScript along with jQuery and AngularJS framework
- Implement MVC and responsive design to scale well across PC, tablet and Mobile Phone

**Overview:**

This course provides you hands-on experience and exposure to develop jQuery Mobile based responsive web application. This course builds strong foundation of jQuery which will help developer to apply concepts for responsive web frontend development.

**Delivery method:**

Instructor lead, hands-on exercises backed with assignments and mini project

**Detailed course contents:**

- Introduction to jQuery Mobile
- jQuery Mobile Pages
- jQuery Mobile Transitions
- jQuery Mobile Buttons
- jQuery Mobile Icons
- jQuery Mobile Popups
- jQuery Mobile Toolbars
- jQuery Mobile Navbars
- jQuery Mobile Panels
- jQuery Mobile Collapsibles
- jQuery Mobile Tables
- jQuery Mobile Grids
- jQuery Mobile Lists
- jQuery Mobile Forms
- jQuery Mobile Themes
- jQuery Mobile Events

## Foundation Paradigms

**Module Objectives:**

- To become proficient in OOPS, Design Patterns and Data Modelling concepts
- At the end of the course candidates will learn the concepts and their practical applications

**Overview:**

This course is targeted for fresh engineers or professional who want to build competency in the Object-Oriented Programming. We focus on understanding OOPs concepts and its applications.

**Delivery method:**

Instructor lead, hands-on exercises backed with assignments and mini project

**Detailed course contents:**

- OOPs
- Design Patterns
- Object Oriented Design
- JSON
- DOM
- AJAX

## Back-end – Course modules

### MySQL

**Module Objectives:**

- Create your own database or interact with existing databases
- Write complex SQL queries across multiple tables

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**Overview:**

This course provides you strong foundation to become an In-demand SQL Master by creating complex databases and building reports through real-world projects

**Delivery method:**

Instructor lead, hands-on exercises backed with assignments and mini project

**Detailed course contents:**

- Introduction to SQL
- Development environment overview
- Creating Databases and Introduction to Queries
- Logical operators and dates
- Update and delete rows
- Multiple tables and JOINS
- CRUD and PHP
- Authentication with PHP and MySQL
- Deploy to production

### Express Framework

**Module Objectives:**

- Building Strong expertise on Express framework to develop responsive web application





- Implement MVC and responsive design to provide unified and intuitive user experience across PC, tablet and Mobile Phone

### Overview:

This course provides you strong foundation on Express framework driven by hands-on experience and exposure to develop responsive web application using MVC design pattern. During the course, you should be able to builds strong background about Express and Node.js architecture, usage of services and applying Node.js concept to develop frontend application supported by backend web servers.

### Delivery method:

Instructor lead, hands-on exercises backed with assignments and mini project

Detailed course contents:

- Introduction to Express Framework
- Introduction to Nodejs
- What is Nodejs
- Getting Started with Express
- Your first Express App
- Express Routing
- Implementing MVC in Express
- Middleware
- Using Template Engines
- Error Handling
- API Handling
- Debugging
- Developing Template Engines
- Using Process Managers
- Security & Deployment

## Angular JS

### Module Objectives:

- Building Strong expertise to develop front end application using Angular JS
- Implement MVC and responsive design to scale well across PC, tablet and Mobile Phone

### Overview:

This course provides you strong foundation on AngularJS driven by hands-on experience and exposure to develop responsive web application using MVC design pattern. During the course, you should be able to builds strong background about AngularJS architecture, usage of services and applying AngularJS concept to develop frontend application.

### Delivery method:

Instructor lead, hands-on exercises backed with assignments and mini project

**Detailed course contents:**

- Introduction to AngularJS
- AngularJS Expressions
- AngularJS Modules
- AngularJS Data Binding
- AngularJS Scopes
- AngularJS Directives & Events
- AngularJS Controllers
- AngularJS Filters
- AngularJS Services
- AngularJS HTTP
- AngularJS Tables
- AngularJS Select
- Fetching Data from MySQL
- AngularJS Validation
- AngularJS API
- AngularJS Animations
- AngularJS i18n and i10n

## Node.js

**Module Objectives:**

- Building Strong expertise on Node.js core to develop web application
- Implement web application and deployment

**Overview:**

This course provides you strong foundation on Node.js driven by hands-on experience and exposure to develop NodeJS based application and deployment. During the course you should be able to builds strong background about Node.js architecture, usage of services and applying Node.js concept to develop frontend application supported by backend web servers.

**Delivery method:**

Instructed lead, hands-on exercises backed with assignments and mini project

**Detailed course contents:**

- Getting started
- Node Core
- Node Modules
- File System
- Debugger
- Automation and Deployment

### Module Objectives:

- Building Strong expertise on PHP core
- Implement web application and deployment

### Overview:

This course provides you strong foundation on PHP driven by hands-on experience and exposure to develop PHP based application and deployment. During the course you should be able to builds strong background about PHP architecture, usage of services and applying PHP concept to develop frontend application supported by backend web servers.

### Delivery method:

Instructed lead, hands-on exercises backed with assignments and mini project

### Detailed course contents:

- PHP Tutorial
- PHP Intro
- PHP Install
- PHP Syntax
- PHP Variables
- PHP Data Types
- PHP Strings
- PHP Constants
- PHP Operators
- PHP If...Else...Elseif
- PHP Switch
- PHP Loops
- PHP Functions
- PHP Arrays
- PHP Superglobals
- PHP Forms
- PHP Advanced
- PHP Arrays Multi
- PHP Date and Time
- PHP Include
- PHP File
- PHP Cookies
- PHP Sessions
- PHP Filters
- PHP Error Handling
- PHP Exception
- PHP MySQL

# Data Exchange – Course modules

## Hyper Text Transfer Protocol (HTTP)

### Module Objectives:

Developing single page application using Express Framework

### Overview:

This course provides you hands-on experience and exposure to developing web application using HTTP. This course builds strong foundation of HTTP based request and response scenarios which will help developer to build efficient web applications.

### Delivery method:

Instructor lead, hands-on exercises backed with assignments and mini project

### Detailed course contents:

- Introduction to HTTP
- HTTP Parameters
- HTTP Messages
- HTTP Request
- HTTP Response
- HTTP Methods
- HTTP Status Code
- HTTP Header Fields
- Registration
- HTTP Authentication
- HTTP Caching
- HTTP URL Encoding
- HTTP Security

## WebSockets

### Objectives:

- Building strong expertise in WebSockets
- Implement frontend and backend scenarios using WebSockets

### Overview:

This course provides you hands-on experience and exposure to use WebSockets in frontend and backend scenarios. This course builds strong foundation for web application development based on client-server architecture.

**Delivery method:**

Instructor lead, hands-on exercises backed with assignments and mini project

**Detailed course contents:**

- Introduction to Web sockets
- Web socket URIs
- Web socket APIs
- Opening Handshake
- Data Framing
- Sending and Receiving Data
- Closing the Connections
- Error Handling
- Web socket Security
- Deployment Considerations
- Project

## API's

**Objectives:**

- Building strong expertise in API's
- Implement frontend and backend API's in web apps

**Overview:**

This course provides you hands-on experience and exposure to use API's in frontend and backend scenarios. This course builds strong foundation for web application development based on client-server architecture.

**Delivery method:**

Instructor lead, hands-on exercises backed with assignments

**Detailed course contents:**

- Intro to API's
- JSON and XML
- Making API Requests with Node
- Google & Facebook APIs Examples

## Wordpress

**Objectives:**

- Building strong expertise Wordpress
- Develop and deploy custom wordpress website

**Overview:**



This course provides you hands-on experience and exposure to wordpress CMS platform. This course builds strong foundation for wordpress development.

### **Delivery method:**

Instructor lead, hands-on exercises backed with assignments

### **Detailed course contents:**

- Introduction to wordpress
- Installing wordpress
- Configuration
- Themes
- Plugins/Widgets
- Menus
- Adding content
- Post Type
- Taxonomy
- User Roles and Permissions
- Working with the editor
- Managing media