

Frontend Web Development **Angular** Course

Course consists of two parts:

1. JavaScript
2. Angular

JavaScript Syllabus

JavaScript Fundamentals

1. Introduction to JavaScript

Hello, World!

Code Structure

The Modern Mode, "use strict"

Basic Programming Concepts

2. Variables and Constants

Data Types

Type Conversions

Basic Operators and Mathematics

3. Control Flow

If/Else, Switch, Ternary Operator

Loops: While, Do/While, For

4. Functions

Introduction to Functions

Function Expressions and Declarations

Arrow Functions

5. Working with Data

Strings and String Methods

Arrays and Array Methods

Dates and Time Manipulation

6. Essential Tools

Debugging in Chrome

Coding Style & Best Practices

Commenting Code

7. Error Handling

Error Handling: Try/Catch

Custom Errors, Extending Error

8. Miscellaneous Topics

JavaScript Specials

Generating Random Numbers in JavaScript

JavaScript Advanced

9. Advanced Programming Concepts

Understanding Objects and Their Methods

Deep and Shallow Copying of Objects, References

The "This" Keyword in Depth

10. Object-Oriented Programming

Introduction to Object-Oriented Programming (OOP)

Introduction to JavaScript Classes

Class Definition and Methods

Static Methods in Classes

11. Inheritance in JavaScript

Using Extends and Super Keywords

Getters and Setters in JavaScript

12. Asynchronous JavaScript

Introduction to Asynchronous Programming

Callbacks, Promises and Async/Await

Timers: setInterval() and setTimeout()

13. Working with Data Formats

Understanding JSON

JSON Methods and Working with JSON

14. Web APIs and AJAX

Understanding APIs

XMLHttpRequest: Usage and Best Practices

Introduction to Fetch API

HTTP Request Types: GET, POST, PUT, DELETE

HTML Rendering Using JavaScript

JavaScript HTML DOM

15. Understanding the DOM

Introduction to DOM

DOM Elements

DOM Methods

Manipulating DOM HTML

Styling with DOM CSS

DOM Animations

Understanding and Using DOM Events

Working with DOM Event Listener

Navigating the DOM Tree

Understanding and Manipulating HTML Element Collections

16. Advanced DOM Manipulation

AJAX and Async/Await

Working with Local Storage

Manipulating URLs and handling browser history

Additional Topics

17. Modular JavaScript

Understanding ES6 Modules

CommonJS, AMD and UMD patterns

18. Modern Tooling

Introduction to Node.js and NPM

Bundlers/Task Runners like Webpack, Rollup, Parcel

19. Firebase with JavaScript

Introduction to Firebase

What is Firebase?

Core Features and Benefits

Setting Up Firebase in a JavaScript Project

Firebase Authentication

Firebase Firestore

Introduction to Cloud Firestore

Firestore Data Model (Documents and Collections)

Reading, Adding, Updating, and Deleting Data

Realtime Updates with Firestore

Firebase Storage

Introduction to Firebase Storage

Uploading Files to Firebase Storage

Downloading Files from Firebase Storage

Deleting Files from Firebase Storage

20. Introduction to Front-end Frameworks (React, Vue, Angular etc)

21. Web Performance Optimization

22. Application Deployment

Angular Course Syllabus

Introduction to Angular and Environment Setup

What is Angular?

What is Angular CLI?

Setting up the Environment

How to create an Angular project using CLI

Understanding the Angular project structure

Overview of Angular basic CLI commands

Angular Basics

Components in Angular

Understanding Component structure and files

Component selector and how to access it from different places

Creating a Component using CLI command

Data Binding and Event Handling

What is Data Binding?

String Interpolation

Property Binding

Event Binding

Two-Way Binding

Splitting Apps into components

Property and Event Binding

Communicating Between Components

Understanding EventEmitters and Binding to Custom Events

Passing data into Angular components (Input(), Output())

View Encapsulation

Local References in Templates

ViewChild(), ViewChildren, ContentChild

Working with Directives

Understanding Directives

Built-in Directives: ngIf, ngElse, ngFor, ngSwitch, ngClass, ngStyle

Creating a Basic Attribute Directive

Using Renderer to build a better Attribute Directive

- Using HostListener to Listen to Host Events
- Using HostBinding to Bind to Host Properties
- Building a Structural Directive
- Styling Elements Dynamically with ngStyle
- Applying CSS Classes Dynamically with ngClass
- Data Binding with ngFor
- Working with Indexes in ngFor

Understanding Angular Material UI

- What is Angular Material UI?
- How to integrate Angular Material UI in an Angular project

Utilizing Services and Dependency Injection

- Understanding Services in Angular
- Injecting Services into components
- Understanding the Hierarchical Injector
- Injecting Services into Services
- Using Services for Cross-Component Communication

Angular Routing

- Understanding Angular routing
- Navigation with router link
- Understanding Navigation Paths
- Passing parameters to routes and fetching them
- Setting up child routes
- Passing Query Parameters and Fragments
- Configuring the handling of query parameters
- Redirecting and Wildcard Routes
- Route Guards: canActivate and resolve
- Authentication & Route Protection in Angular

Forms in Angular

- Understanding Template-Driven Forms
- Building and Registering Form Controls
- Understanding Form State
- Adding Form Validation and Error Messages
- Form Grouping and Control Access
- Understanding Reactive Forms
- Building Reactive Forms and Submitting Data
- Adding Validation in Reactive Forms

Working with Form Control Groups and Arrays
Creating a Custom Async Validator

Working with Angular Pipes

Understanding Angular pipes
Built-in Pipes in Angular
Creating a Custom Pipe

Understanding RxJS and Observables

Introduction to RxJS
Understanding Observables
Understanding the Role of Observables in Angular
Observables vs. Promises
Using Operators in RxJS (map, filter, reduce, etc.)

Making HTTP Requests

Understanding HTTP Request Types
Introduction to HttpClient
GET, POST, PUT, DELETE requests in Angular
Working with Observables in HTTP requests
Error Handling in HTTP requests

HTTP Interceptors in Angular

Understanding HTTP Interceptors
Creating and Configuring Interceptors
Using Interceptors for Logging, Caching, and Error Handling

Firestore Integration

Introduction to Firestore
Using Firestore as a real-time database
Understanding Firestore analytics
Deploying an Angular application on Firestore

Other Integrations

Integrating Google Maps in an Angular Project
Understanding the Facebook Developer SDK
Facebook Authorization in Angular

Managing Application State with NgRx

Understanding Application State

Introduction to NgRx
Understanding and Creating Reducers and Actions
Setting up the NgRx Store
Preparing and Implementing Update & Delete Actions

Dynamic Components in Angular

Understanding Dynamic Components
Creating Dynamic Components at Runtime
Passing Data to Dynamic Components

Unit Testing in Angular

Introduction to Unit Testing in Angular
Overview of Testing Frameworks: Jasmine and Karma
Writing Test Cases for Components, Services, and Pipes
Mocking Dependencies in Unit Tests
Testing User Interactions and Directives

Deployment and Performance Optimization

Understanding AOT and JIT Compilation
Build and Deployment Strategies for Angular Applications
Performance Tuning and Change Detection Strategies
Preloading Modules for Faster Load Times
Lazy Loading Modules to Improve Initial Load Time