

Angular Web Application Development Internship

(15 Days | Practical-Oriented | Industry Ready)

INTERNSHIP SYLLABUS

Internship Objective

To train students in **Angular front-end development** with hands-on practice so they can confidently build **real-time web applications**, integrate APIs, and complete projects independently.

Day 1 – Web & Angular Basics

- Introduction to Frontend Frameworks
- Why Angular? Architecture overview
- SPA (Single Page Application) concept
- Setting up Node.js & Angular CLI
- Creating first Angular app

Practical:

Install Angular CLI

Run first Angular project

Day 2 – TypeScript Fundamentals

- TypeScript vs JavaScript
- Variables, data types
- Functions & arrow functions
- Classes & interfaces

- Modules & imports

Practical:

TypeScript coding exercises

Component class creation

Day 3 – Angular Project Structure

- Angular folder structure
- Main.ts, AppModule, Components
- Component lifecycle
- Template & style linking

Practical:

Create multiple components

Component rendering

Day 4 – Data Binding & Directives

- Interpolation
- Property & Event binding
- Two-way binding
- Built-in directives (*ngIf, *ngFor)

Practical:

Form with live data binding

Conditional UI rendering

Day 5 – Pipes & Custom Directives

- Built-in pipes (date, currency, uppercase)
- Custom pipes
- Attribute & structural directives

Practical:

Create custom pipe

UI formatting

Day 6 – Routing & Navigation

- Angular Router module
- Route configuration

- RouterLink & RouterOutlet
- Lazy loading concept

Practical:

Multi-page Angular app

Navigation menu

Day 7 – Forms in Angular

- Template-driven forms
- Reactive forms
- Form validation techniques

Practical:

Registration form with validation

Day 8 – Services & Dependency Injection

- Service creation
- Dependency Injection (DI)
- Shared services
- Data sharing between components

Practical:

Service-based data flow

Day 9 – HTTP & API Integration

- HttpClient module
- GET, POST, PUT, DELETE
- API error handling
- JSON data binding

Practical:

Consume REST API

Display backend data

Day 10 – State Management & Observables

- RxJS basics
- Observables & subscriptions
- Async pipe

- Error handling with RxJS

Practical:

Live data stream handling

Day 11 – UI Design & Styling

- Angular Material introduction
- Bootstrap integration
- Responsive layouts
- Theme customization

Practical:

Professional UI design

Day 12 – Authentication Concepts

- Login & logout flow
- Token-based authentication (JWT overview)
- Role-based UI access

Practical:

Login page UI + validation

Day 13 – Mini Project Development

Project Ideas:

- Admin Dashboard
- Student Management System
- Product Listing Application
- Employee Portal

Practical:

Complete frontend application

Day 14 – Testing & Optimization

- Angular testing overview
- Performance optimization
- Build optimization
- Debugging techniques

Practical:

Application testing

Bug fixing

Day 15 – Deployment & Evaluation

- Angular build process
- Hosting on Firebase / Netlify
- Project presentation
- Technical evaluation & feedback

Outcome:

Project demo

Internship assessment

