🚀 Angular 21 – Complete Course Content (Basic → Advanced → Industry Ready)

Teaching-friendly | Interview-oriented | Project-based

📙 MODULE 1: Web & Angular Fundamentals (Foundation Module) 😃

1.1 Web Development Basics (Quick Recap)

- How websites work
- Client vs Server
- Frontend vs Backend
- SPA vs MPA
- Role of frameworks

1.2 Introduction to Angular

- What is Angular?
- History of Angular (AngularJS → Angular 21)
- Why Angular is used in enterprise applications
- Angular vs React vs Vue (high level)
- Real-world applications using Angular

💼 MODULE 2: Environment Setup & Project Structure 👏

2.1 System Setup

- Node.js & NPM overview
- Angular CLI introduction
- Installing Angular CLI
- Creating first Angular app

2.2 Angular Project Structure

- Understanding folder structure
- `main.ts`, `app.module.ts`
- `angular.json`
- `package.json`
- Build & serve process

2.3 Running & Debugging App

- `ng serve`
- Development vs Production build
- Common setup errors

🧱 MODULE 3: Angular Basics & Component Introduction 👍

3.1 Angular Architecture Overview

- How Angular works internally
- Module → Component → Template flow

3.2 Angular Components (Intro Level)

- What is a component?
- Component anatomy
- Creating components using CLI
- Root component vs child component

3.3 Templates Overview

- Template syntax
- Inline vs external templates
- Basic component interaction

🟦 TYPESCRIPT LANGUAGE MODULES (VERY IMPORTANT)

👉 *These modules are taught BEFORE deep Angular concepts*

🟦 MODULE 4: TypeScript Fundamentals – Basics

4.1 Introduction to TypeScript

- What is TypeScript?
- Why Angular uses TypeScript
- TypeScript vs JavaScript
- Compilation process

4.2 Variables & Declarations

- `var`, `let`, `const`
- Scope & hoisting
- Best practices

🟦 MODULE 5: TypeScript Data Types & Control Statements

5.1 Data Types

- number, string, boolean
- array
- tuple
- enum
- any, unknown, void, never
- type inference

5.2 Control Statements

- if, else
- switch
- for, while, do-while
- break & continue
- Real-life examples

🟦 MODULE 6: TypeScript Objects, Arrays & Functions

6.1 Objects

- Object creation
- Type definitions
- Optional properties
- Readonly properties

6.2 Arrays

- Typed arrays
- Array methods
- Real-world data handling

6.3 Functions

- Function typing
- Optional & default parameters
- Arrow functions
- Return types

🟦 MODULE 7: TypeScript OOPs Concepts

7.1 Classes & Objects

- Class structure
- Constructors
- Access modifiers (public, private, protected)

7.2 OOPs Concepts

- Inheritance
- Polymorphism
- Encapsulation
- Abstraction

7.3 Interfaces & Abstract Classes

- Interface vs Class
- Interface vs Type
- Real Angular use cases

🟦 MODULE 8: TypeScript Advanced Concepts & Decorators

8.1 Advanced TypeScript

- Type aliases
- Union & intersection types
- Generics
- Utility types

8.2 Decorators (Angular Backbone)

- What are decorators?
- Class decorators
- Property decorators
- Method decorators

8.3 Angular Decorators Overview

- @Component
- @NgModule
- @Injectable
- @Input, @Output

🟥 ANGULAR CORE MODULES (AFTER TYPESCRIPT)

🔗 MODULE 9: Data Binding (Very Important Module)

9.1 Types of Data Binding

- Interpolation
- Property binding
- Event binding
- Two-way binding

9.2 `ngModel` in Depth

- FormsModule usage
- Real-life form examples

9.3 Practical Examples

- Profile card
- Counter app
- Input → Output live binding

🧭 MODULE 10: Directives (Structural & Attribute)

10.1 Built-in Directives

- `*ngIf`
- `*ngFor`
- `*ngSwitch`

10.2 Attribute Directives

- `ngClass`
- `ngStyle`

🎨 MODULE 11: Styling & UI Handling

- Global vs component styles
- CSS encapsulation
- Responsive UI
- Bootstrap / Tailwind
- Angular Material overview

🧩 MODULE 12: Pipes (Data Transformation)

- Built-in pipes
- Async pipe
- Custom pipes
- Performance considerations

📦 MODULE 13: Modules & Application Architecture

- NgModule deep dive
- Feature modules
- Shared & core modules
- Lazy loading

🧪 MODULE 14: Forms (Template & Reactive Forms)

- Template-driven forms
- Reactive forms
- Validations
- Dynamic forms
- Real-world forms

🌐 MODULE 15: Routing & Navigation

- Basic & advanced routing
- Route guards
- Lazy loaded routes
- Programmatic navigation

🔄 MODULE 16: Services & Dependency Injection

- Services
- Dependency Injection
- Singleton pattern
- Shared data services

🌍 MODULE 17: HTTP & API Integration

- HTTPClient
- REST APIs
- Observables
- Error handling

🔐 MODULE 18: Authentication & Authorization

- Login / Logout
- JWT
- HTTP interceptors
- Route protection

⚙️ MODULE 19: State Management & Signals (Angular 21)

- Angular Signals
- Signal vs Observable
- State patterns
- Best practices

🚀 MODULE 20: Performance Optimization

- Change detection
- OnPush
- TrackBy
- Lazy loading
- Memory leaks

🎯 MODULE 21: Interview Preparation (From Day One)

- Angular interview questions
- MCQs
- Coding rounds
- Common mistakes
- Real interview scenarios

📌 COURSE HIGHLIGHTS

✔ *Daily class notes & PDFs*
✔ *Daily assignments (minimum 10 questions)*
✔ *Quality preferred over quantity*
✔ *Interview preparation from basics*
✔ *Beginner-friendly & industry-ready*