



## **Week 1: Introduction to Angular**

- What is Angular?
- Why use Angular?
- Setting up the development environment

## **Week 2: Components and Templates**

- Components and their role in Angular
- Creating templates with Angular's template syntax
- Data binding and property binding

## **Week 3: Directives**

- Overview of Angular directives
- Built-in directives in Angular
- Creating custom directives

## **Week 4: Dependency Injection**

- What is dependency injection?
- Benefits of dependency injection in Angular
- Implementing dependency injection in Angular

## **Week 5: Services and HTTP**

- Creating services in Angular

- Consuming HTTP services in Angular
- Error handling in HTTP services

## **Week 6: Routing and Navigation**

- Setting up routes in Angular
- Navigating between different routes
- Route guards for authentication and authorization

## **Week 7: Pipes**

- Overview of pipes in Angular
- Built-in pipes in Angular
- Creating custom pipes

## **Week 8: Forms and Validation**

- Creating forms in Angular
- Implementing form validation with built-in and custom validators
- Reactive forms vs template-driven forms

## **Week 9: Authentication and Authorization**

- Implementing authentication with Angular
- Using JSON Web Tokens (JWT) for authentication
- Authorization with role-based access control

## **Week 10: Testing in Angular**

- Unit testing with Jasmine and Karma
- End-to-end testing with Protractor
- Test-driven development (TDD) with Angular

## **Week 11: Advanced Component Techniques**

- Content projection and ng-content
- ViewChild and ContentChild decorators
- Dynamic component creation

## **Week 12: Reactive Programming with RxJS**

- Introduction to Reactive Extensions (Rx)
- Observables and observers in RxJS
- Operators for transforming and manipulating data streams

## **Week 13: Internationalization and Localization**

- Implementing internationalization (i18n) in Angular
- Creating localized versions of your app
- Using translation files and the Angular localization API

## **Week 14: Server-Side Rendering**

- What is server-side rendering (SSR)?
- Benefits and drawbacks of SSR
- Implementing SSR with Angular Universal

## **Week 15: Progressive Web Apps (PWA)**

- What are PWAs?
- Building PWAs with Angular
- Adding offline support and push notifications to PWAs

## **Week 16: Animations and Performance**

- Implementing animations in Angular

- Optimizing performance with lazy loading and preloading
- Best practices for improving Angular performance

## **Week 17: Angular Material**

- Overview of Angular Material
- Using Material components and styling
- Customizing Material themes and styles

## **Week 18: Angular and Redux**

- Introduction to Redux and the Flux architecture
- Implementing Redux in Angular with @ngrx/store
- Managing state with Redux in Angular

## **Week 19: Angular and GraphQL**

- Introduction to GraphQL
- Implementing GraphQL with Apollo in Angular
- Benefits of using GraphQL with Angular

## **Week 20: Final Project**

- Students will work on a final project that demonstrates their understanding and application of advanced Angular concepts and technologies.

## **Week 21: Final Project Presentations and Review**

- Students will present their final project to the class and receive feedback from their peers and the instructor.
- Review of the course content and key takeaways.