

Course Code	
Course Name	Front End Development

Duration (in days)	06	Proficiency Level	Fundamentals
Pre-requisites	None	Target Audience	Interns

## Learning Outcome

At the end of the program, participants will be able to learn:

- TypeScript
- Angular Introduction
- Components and DataBinding
- Directives
- Life Cycle Hooks & Pipes
- Using Services & Dependency Injection
- Forms Programming
- RXJS and Http Programming
- Routing

## Day-wise Session Plan

Day	Unit	Objective(s)	Hours
1	TypeScript	<ul style="list-style-type: none"> <li>• Benefits of TypeScript</li> <li>• Basic Data Types</li> <li>• Arrays, Tuples, Enum, Any and void</li> <li>• null and undefined</li> <li>• Type Inference</li> <li>• Type Casting</li> <li>• Let and var</li> <li>• Const declaration</li> <li>• Classes &amp; Constructor method</li> <li>• Inheritance &amp; Abstract class</li> <li>• Type Casting</li> <li>• Type Assertion</li> <li>• Interface Declaration and Initialization</li> <li>• Generic Functions</li> </ul>	8
2	Angular Introduction	<ul style="list-style-type: none"> <li>• Single Page Applications</li> <li>• Characteristics of SPA</li> <li>• Angular Environment and IDEs</li> <li>• Installing Angular CLI</li> <li>• Directory structure</li> <li>• Bootstrapping Angular Application</li> <li>• AppModule and Component Declaration</li> <li>• Angular CLI commands</li> <li>• Bootstrap and styling your application</li> <li>• Decorators in Angular</li> </ul>	8
3	Components and DataBinding	<ul style="list-style-type: none"> <li>• Components</li> <li>• Creating Components</li> </ul>	8

		<ul style="list-style-type: none"> <li>• Component Templates and Component Styles</li> <li>• Data Databinding</li> <li>• String Interpolation</li> <li>• Property Binding</li> <li>• One Way Binding</li> <li>• Two Way Binding</li> <li>• Event Binding</li> <li>• Passing Data between Components</li> </ul>	
4	Directives	<ul style="list-style-type: none"> <li>• Directives</li> <li>• Structural Directives and Attribute Directives</li> <li>• ngIf to Output Data Conditionally</li> <li>• ngIf with an Else Condition</li> <li>• Styling Elements ngStyle</li> <li>• CSS Classes ngClass</li> <li>• Outputting Lists with ngFor</li> <li>• Understanding ngSwitch</li> </ul>	4
4	Life Cycle Hooks & Pipes	<ul style="list-style-type: none"> <li>• Component Lifecycle</li> <li>• Lifecycle Hooks in Action</li> <li>• Using Built in Pipes</li> <li>• The PipeTransform Interface</li> <li>• Creating Custom Pipes</li> </ul>	4
5	Using Services & Dependency Injection	<ul style="list-style-type: none"> <li>• Understanding DI in Angular</li> <li>• Constructor based hierarchical Injector</li> <li>• Singleton and non-Singleton Objects</li> <li>• Using Service Classes</li> <li>• Various Decorators in DI</li> <li>• @Injector()</li> <li>• @Injectable()</li> </ul>	4
5	Forms Programming	<ul style="list-style-type: none"> <li>• Template Forms and Reactive Forms</li> <li>• FormBuilder, FormGroup, FormControl classes</li> <li>• Validating Forms</li> <li>• Creating Custom Validators</li> <li>• Asynchronous Validations</li> <li>• Submitting form data to the server</li> </ul>	4
6	RXJS and Http Programming	<ul style="list-style-type: none"> <li>• RXJS Introduction</li> <li>• Observables, Observers and Subjects</li> <li>• Consuming Web Services using HttpClientModule</li> <li>• Passing parameters using HTTP Headers</li> <li>• Error handling in RXJS</li> </ul>	4
6	Routing	<ul style="list-style-type: none"> <li>• Routing Introduction</li> <li>• Route Definition Object</li> <li>• Router Outlets</li> <li>• Passing Parameters to Routes</li> <li>• Life cycle of Router</li> <li>• Implementing Guards and Resolvers</li> </ul>	4
		Total	48