



Department of Computer Science & Engineering		LP: CS18002
B.E/B.Tech	: CS & IT	Rev. No: 00
Sub. Code / Sub. Name: CS18002 / Advanced User Interface Technologies		Date: 12/01/2021
Unit	: I	

**UNIT I INTRODUCTION TO TYPESCRIPT**

TypeScript : Introduction to TypeScript – Features of TypeScript – Installation setup – Variables – Datatypes – Enum – Array – Tuples – Functions – OOP concepts – Interfaces – Generics – Modules – Namespaces – Decorators – Compiler options – Project Configuration

**Objective:**

- To understand the concepts and need of TypeScript

Session No *	Topics to be covered	Ref	Teaching Aids
1	Introduction to TypeScript	R1-Ch.1:Pg. No.1-4	PPT
2	Features of TypeScript	R1-Ch.1:Pg. No. 5-11	PPT
3	Installation setup	R1-Ch.1:Pg. No. 12-34	PPT
4	Variables, Datatypes, Enum – Array – Tuples	R1-Ch.2:Pg. No. 35-46	PPT
5	Functions	R1-Ch.2:Pg. No. 47-62	PPT
6	OOP concepts	R1-Ch.8:Pg. No. 235-269	PPT
7	Interfaces - Generics	R1-Ch.3:Pg. No. 63-105	PPT
8	Modules - Namespaces	R1-Ch.4:Pg. No. 107-130	PPT
9	Decorators - Compiler options – Project Configuration	<a href="https://www.typescriptlang.org/docs/handbook/decorators.html">https://www.typescriptlang.org/docs/handbook/decorators.html</a>	PPT

Content beyond syllabus covered (if any):



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Unit : II

## UNIT II INTRODUCTION TO CLIENT-SIDE JS FRAMEWORK – BASICS OF ANGULAR 4.0

Introduction to Angular 4.0 - Needs & Evolution – Features – Setup and Configuration – Components and Modules –  
Templates – Change Detection – Directives – Data Binding - Pipes – Nested Components

### Objective:

- To understand and practice Client-side JS Framework, Basics of ANGULAR 4.0

Session No *	Topics to be covered	Ref	Teaching Aids
10	Introduction to Angular 4.0	T1-Ch 3·Pg No 64-66 WR*	PPT
11	Needs & Evolution, Features	T1-Ch.3 Pg No 66-68 WR*	PPT
12	Setup and Configuration	T1-Ch.3·Pg. No 70-79 WR*	PPT
13	Components and Modules	T1-Ch 5·Pg. No 80-117 WR*	PPT
14	Templates	WR*	PPT
15	Change Detection	WR*	PPT
16	Directives	T1-Ch 5·Pg. No.119-128 WR*	PPT
17	Data Binding	T1-Ch.5·Pg No.128-135 WR*	PPT
18	Pipes, Nested Components	WR*	PPT

Content beyond syllabus covered (if any):

\* Session duration: 50 mins



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Unit : III

**UNIT III** INTRODUCTION TO CLIENT-SIDE JS FRAMEWORK – FORMS AND ROUTING  
IN ANGULAR 4.0

Template Driven Forms - Model Driven Forms or Reactive Forms - Custom Validators - Dependency Injection - Services - RxJS Observables - HTTP - Routing

Objective: To understand various forms, services and routing in ANGULAR 4.0

Session No *	Topics to be covered	Ref	Teaching Aids
19	Forms in Angular JS	T1-Ch.6.Pg. No 136-145 WR*	PPT
20	Template Driven Forms	WR*T1-Ch 6:Pg. No 146-148 WR*	PPT
21	Model Driven Forms or Reactive Forms	T1-Ch.6 Pg. No 149-150 WR*	PPT
22	Custom Validators	T1-Ch.6:Pg. No 151-163 WR*	PPT
23	Dependency Injection	T1-Ch.7.Pg. No.164-169 WR*	PPT
24	Services	T1-Ch.7 Pg No.170-183 WR*	PPT
25	RxJS Observables	T1-Ch.10:Pg. No 271-308 WR*	PPT
26	HTTP	T1-Ch 8:Pg No.184-214 WR*	PPT
27	Routing	T1-Ch 9 Pg. No.215-268 WR*	PPT
Content beyond syllabus covered (if any):			

\* Session duration: 50 mins



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Unit : IV

### Unit Syllabus:INTRODUCTION TO REACT AND ITS ROUTER

Introduction to React: Platforms and Frameworks tools – Hybrid frameworks versus Native – React Environment Setup – React internals – React JSX – React Components and its styling– React Router: Parameters – Designing single page applications using React Router

#### Objective:

- To understand on Front-end application development and the React library

Session No *	Topics to be covered	Ref	Teaching Aids
28	Introduction to React	R3-Ch.1.Pg No 2-12	PPT
29	Platforms and Frameworks tools	R3-Ch 2:Pg No 13-21 WR*	PPT
30	Hybrid frameworks versus Native	WR*	PPT
31	React Environment Setup	R3-Ch 15:Pg No 179-199	PPT
32	React internals	R3-Ch.1.Pg. No.1-4	PPT
33	React JSX	R3-Ch.7.Pg. No.81-88	PPT
34	React Components and its styling	T3-Ch 7 Pg No 151-178 R3-Ch 3:Pg No 23-36 R3-Ch 11:Pg. No.123-133	PPT
35	React Router: Parameters	R3-Ch.13:Pg No.153-154 WR*	PPT
36	Designing single page applications using React Router	R3-Ch 13 Pg No 141-162	PPT

Content beyond syllabus covered (if any):

\* Session duration: 50 mins



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Unit : V

**Unit Syllabus: INTRODUCTION TO REDUX AND CLIENT-SERVER COMMUNICATION**

Introduced to uncontrolled and controlled forms – Form validation in React applications – Overview of the Flux architecture - Introduction to Redux – React Redux Forms and its validation – Redux Actions and Combining Reducers – Client-Server Communication and Fetch , Building and Deploying the React Application

**Objective:**

- To understand various React features including components and forms

Session No *	Topics to be covered	Ref	Teaching Aids
37	Introduced to uncontrolled forms	T2-Ch 6:Pg No 125-131	PPT
38	Introduced to controlled forms	T2-Ch 6 Pg. No.131-134	PPT
39	Form validation in React applications	R3-Ch.14:Pg. No 168-178 WR*	PPT
40	Overview of the Flux architecture	WR*	PPT
41	Introduction to Redux	WR*	PPT
42	React Redux Forms and its validation	WR*	PPT
43	Redux Actions and Combining Reducers	WR*	PPT
44	Client-Server Communication and Fetch	WR*	PPT
45	Building and Deploying the React Application	T2-Ch.9 Pg No.198-227 WR*	PPT
Content beyond syllabus covered (if any):			

\* Session duration. 50 mins



## SRI VENKATESWARA COLLEGE OF ENGINEERING

## COURSE DELIVERY PLAN - THEORY

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**TEXT BOOKS:**

1. Nate Murray, Felipe Coury, Ari Lerner and Carlos Taborda, "ng-book. The Complete Book on Angular 4", First Edition, CREATSPACE Publishers, 2017
2. Michele Bertoli, "React Design Patterns and Best Practices Build easy to scale modular applications using the most powerful components and design patterns", First Edition, Packt Publishing, 2017

**REFERENCES :**

- 1 Nathan Rozentals, "Mastering TypeScript", Second Edition, Packt Publishing, 2017.
- 2 Matt Frisbie, "Angular 2 Cookbook", First Edition, Packt Publishing, 2017
- 3 Kirupa Chinnathambi, "Learning React: A Hands-On Guide to Building Web Applications Using React and Redux", Second Edition, Pearson Education, 2018

**WR\* - Web Reference**

	Prepared by	Approved by
Signature		
Name	MR. LAKSHAMANA KUMAR M P MS. GIRIJA M S	DR. R ANITHA
Designation	Assistant Professor	Professor & Head
Date	12-01-2021	12-01-2021
Remarks*:	Same lesson plan will be followed for this academic year 2021-22. u  11/3/22 11/3/22 Mr. R. Kharaghalalle AP/CSE	

\* If the same lesson plan is followed in the subsequent semester/year it should be mentioned and signed by the Faculty and the HOD