

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING & TECHNOLOGY									
Programme	Bachelor of Technology				Branch/Spec.	Computer Science & Engineering ((CSE/BDA/CS/AI&ML)			
Semester	IV				Version	1.0.0.1			
Effective from Academic Year			2026-27		Effective for the batch Admitted in			2025	
Subject code	2CSE410		Subject Name		Front End Technologies				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3	0	2	0	5	Theory	40	60	100
Hours	3	0	4	0	7	Practical	60	40	100
Pre-requisites:									
HTML,CSS,JS, Database and programming									
Learning Outcome:									
After completion of the course, student will be able to,									
<ul style="list-style-type: none"> ● Understand basic fundamentals of Front-end Technologies ● Learn the concept of TypeScript and ECMAScript ● Apply the advanced concepts of ReactJS, Angular and WebAPI ● Develop ReactJS and Angular applications. 									
Theory syllabus									
Unit	Content								Hrs
1	JavaScript and jQuery Understanding the DOM ,DHTML and manipulating the HTML5 Document ,Validating UI, Working with external JavaScript libraries like jQuery and jQueryUI								5
2	TypeScript and ECMAScript (ES6) Understanding TypeScript and ECMAScript ,Understanding Prototypes ,Classes ,Properties, Methods, Events, and Constructors ,Scoping and Modules ,Understanding and Working with Promise ,Transpiling TypeScript								8
3	Angular How Angular works ,Angular Modules ,Angular Components ,Templates and Styles								16
4	Advanced Angular Concepts Routing ,Observables ,Components and Databinding ,Services and Dependency Injection ,Data binding the UI and performing CRUD operations with the Web API using Angular on MongoDB,Enriching the UX								8
5	React JS How ReactJS works ,JSX ,React Components ,Event Management ,State Management,Data binding the UI and performing CRUD operations with the Web API using MongoDB, React Enriching the UX								8
Practical content									
Practicals are based on topics like Angular with CRUD, On express, on JQuery and JSon ECMAScript Script,Angular API,on react and on Advanced React									
Reference Books									
1	React in Action by Mark Tielens Thomas								

2	The Complete Angular Course: Beginner to Advanced											
Course Outcomes:												
COs	Description											
CO1	Understand basic fundamentals of Front-end Technologies.											
CO2	Learn the concept of TypeScript and ECMAScript.											
CO3	Apply the advanced concepts of ReactJS, Angular and WebAPI.											
CO4	Develop ReactJS and Angular applications.											
Mapping of CO and PO:												
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	1	2	3	2	3	1	1	2	3
CO2	1	3	2	2	2	2	1	2	1	2	2	2
CO3	3	2	2	3	2	1	2	3	2	3	1	3
CO4	2	3	1	2	2	3	3	2	3	2	2	1