CS – 08: REACT JS & EXPRESS JS

Objectives:

- Articulate what React is and why it is useful.
- Explore various attributes of web development.
- Explore the basic architecture of a React application.
- Explore various web development techniques of this JavaScript and would learn new techniques based on industry requirement.
- Gain a deep understanding of JSX and Hooks.

Pre-Requisites: Java Script, HTML, CSS and OOPs,

Sr. No	Topics	Details	Weightage in %	Approx Lectures
1.	**Express JS & Java Script**	**Java Script** Java Script Overview & Basics Variable, Conditional Statements, Loops in JS, Functions, Arrays & Events in JS ES6 Overview & Basics ES6 Classes, functions & Promises **Express JS** Setting up an app with ExpressJS, Routing in ExpressJS, Connecting views with templates, configurations and error handling.	20	12
2	**Introduction to JSX & REACT JS**	**Introduction:** What is ReactJS? Installation or Setup, Hello World Program, Create a first app, folder structure **Components:** Creating components, Basic components, Nesting components, functional component, class component **Introduction to JSX:** JSX Programs **Props:** ReactJS Props, React State, Destructing Props and State, setState, methods as Props.	20	12
3	**Form Handling, components and fragments**	**Event Handling:** Event Handling and Binding event handlers **Rendering:** Conditional Rendering and List Rendering, List and keys, Index as Key Anti-pattern **Introduction:** Basic form handling **Components:** Components Life Cycle Methods, Components Mounting Lifecycle methods, Components Updating Lifecycle methods, Pure Components	20	12

		▪ **Fragments**		
4	Memo, Refs, Props and Context	▪ **Memo** ▪ **Introduction to Refs:** Refs, Refs with Class Components, Forwarding Refs and Portals ▪ **Components:** Higher Order Components ▪ **Props Again!**: Rendering Props and Context ▪ **HTTP:** HTTP and React, GET and React, POST and React.	20	12
5	Introduction to Hooks and its implementation	▪ **Introduction:** React Hooks introduction, useState Hook, useState Previous state, useState with object, useState with array. ▪ **useEffect:** useEffect Hook, useEffect after render, Condionally run effects, run effects only once, useEffect with cleanup, useEffect with incorrect dependency. ▪ **Fetching data:** Fetching data with useEffect, useContext Hook ▪ **useReducer Hook:** useReducer – simple state and action, complex state and action, multiple useReducers ▪ **useContext:** useContext, useReducer, Fetching data with useReduer, useState vs useReducer	20	12
		Total	100	60

References Books
1. Learning React, Martin Bean, Kirupa Chinnathambi Pearson Addison Wesley
2. ReactJS Notes for Professional, GoalKicker, Website ebook,
3. The Road to React_ Your journey to master plain yet pragmatic React, LeanPub Book, Robin Wieruch -Independently Published (2020)
4. Codevolution. "ReactJS Tutorial for Beginners." YouTube, YouTube, www.youtube.com/playlist?list=PLC3y8-rFHvwgg3vaYJgHGnModB54rxOk3.

Course Outcomes:

After completion of the course students will be able:

- ✓ Able to Understand the Actual Implementation of Object-Oriented Programming with Application.
- ✓ Able to Understand the use of JavaScript and various React Applications
- ✓ Able to Compute the various attributes of ReactJs Web applications
- ✓ Able to Remembering the components and syntax of ReactJS.
- ✓ Able to Construct a model to prepare a Single Page Applications
- ✓ Able to Implementing various logics and packages to ReactJS for generating the web applications.
- ✓ Able to Implementing the ReactJS with Hooks for web applications.