Course: 501-1: Advanced Web Designing

Course Code	501
Course Title	Advanced Web Designing
Credit	4
Teaching per Week	4 Hrs
Minimum weeks per Semester	15 (Including class work, examination, preparation etc.)
Review / Revision	2021-2022
Implementation Year:	A.Y. 2022-2023
Purpose of Course	Understand the technical foundations, as well as the non-programming / administrative skills needed to be a successful web developer. This course reveals the reasons why a truly successful website developer does more than write code. The course deals with both the Frontend (client-side) and Backend (server-side) of a tech product. This course deals with designing of websites and building the APP.
Course Objective	The students will learn the whole React WebApp building process, from pc to the server. They will work with NoSQL databases. They will learn the whole process of building your App using React.js. At the end of the course, they will develop modern, complex, responsive and scalable web applications with Angular.
Pre-requisite	305-01: Web Designing -1 course of Semester-3. 405-01: Web Designing -2 course of Semester-4.
Course outcome	• Students will be able to develop modern, complex, responsive and scalable websites. • Understand necessary functionalities and elements of clint and server-side development of website.

Course Content	**Unit-1: Concepts of NoSQL: MongoDB**
	1.1 concepts of NoSQL. Advantages and features.
	  1.1.1 MngoDB Datatypes (String, Integer, Boolean, Double, Arrays, Objects)
	  1.1.2 Database creation and dropping database
	1.2 create and Drop collections
	1.3 CRUD operations (Insert, update, delete, find, Query and Projection operators)
	1.4 Operators (Projection, update, limit (), sort ()) and Aggregation commands
	
	Unit-2: Fundamentals of React.js
	2.1 Overview of React
	  2.1.1 Concepts of React.
	  2.1.2 Using React with HTML
	  2.1.3 React Interactive components: Components within components and Files
	  2.1.4 Passing data through Props
	2.2 Class components
	  2.2.1 React class and class components
	  2.2.2 Conditional statements, Operators, Lists
	  2.2.3 React Events: Adding events, Passing arguments, Event objects
	
	Unit-3: Forms and Hooks in React.JS
	3.1 Forms: (Adding forms, Handling forms, Submitting forms)
	  3.1.1 event.target.name and event. Target.event, React Memo
	  3.1.2 Components (TextArea, Drop down list (SELECT))
	3.2 Hooks: Concepts and Advantages
	  3.2.1 useState, useEffect, useContext
	  3.2.2 useRef, useReducer, useCallback, useMemo
	  3.2.3 Hook: Building custom hook, advantages and use
	
	Unit-4: Angular JS
	4.1 Concepts and characteristics of Angular JS
	  4.1.1 Expressions in Angular JS (Numbers, Strings, Objects, Arrays)

	4.1.2 Setting up Environment, Angular JS Filters
	4.1 3 Understanding MVC (Model, View, Controller) architecture
	4.2 AngularJS Directive (ng-app, ng-init, ng-controller, ng-model, ng-repeat)
	  4.2.1 Some other directives: ng-class, ng-animate, ng-show, ng-hide
	  4.2.2 Expressions and Controllers
	  4.2.3 Filters (Uppercase, Lowercase, Currency, order by)
	
	Unit-5: Angular JS: Single page application:
	5.1 Single page application using AngularJS
	  5.1.1 Create a module, Define Simple controller
	  5.1.2 Embedding AngularJS script in HTML
	  5.1.3 AngularJS's routine capability
	    5.1.3.1 \$routeProvider service from ngRoute
	    5.1.3.2 Navigating different pages
	5.2 HTML DOM directives
	  5.2.1 ng-disabled, ng-show, ng-hide, ng-click
	  5.2.2 Modules (Application, Controller)
	  5.2.3 Forms (Events, Data validation, ng-click)
	[All Units carry Equal Weightage]

Reference Books	1. Web Development with Node and Express, Ethan Brown, O'Reilly Media, Inc., ISBN: 978-1-491-94930-6 2. Node.js, MongoDB, React, React Native Full-Stack Fundamentals and Beyond, Eric Bush, Blue Sky Productions Inc., ISBN: 978-0-9971966-8-9 3. MongoDB Fundamentals: A hands-on guide to using MongoDB and Atlas in the real world, Amit Phaltankar, Juned Ahsan, Michael Harrison, Liviu Nedov , ISBN:978-1-83921-064-8 4. Sams Teach Yourself NoSQL with MongoDB in 24 Hours, Pearson Education ISBN-13: 9780672337130 5. MongoDB Basics, David Hows, Peter Membrey, Eelco Plugge, Apress, ISBN-13 (electronic): ISBN:978-1-4842-0895-3 6. Fullstack React: The Complete Guide to ReactJS and Friends, Anthony Accomazzo, Lean Publishing, Ari Learner, Clay Allsopp, David Guttman, Tyler McGinnis, Nate Murray, 7. The Road to React: Your journey to master React.js in JavaScript, by Robin Wieruch 8. Beginning React Native with Hooks, Greg Lim 9. Full-Stack React Projects: Learn MERN stack development by building modern web apps using MongoDB, Express, React, and Node.js, 2nd Edition 10. Angular From Theory To Practice, Asim Hussain, Version 1.2.0, 2017-11-24 11. Angular: Up and Running: Learning Angular, Step by Step, Shyam Seshadri, O'Reilly Media, Inc. 12. Mastering Web Application Development with AngularJS, Pawel Kozlowski Peter and Bacon Darwin, Packt Publishing
Teaching Methodology	Class Work, Discussion, Self-Study, Seminars and/or Assignments
Evaluation Method	30% Internal assessment. 70% External assessment.