

YEAR 1 SEMESTER-II

Item	Item Name	Credit	Hours
Subject 1	Front End Development - React (Th + Pr)	5	75
Subject 2	Ecommerce & Digital Marketing	3	45
Subject 3	Excel Analytics	5	75
Total		13	195

BCA II SEMESTER			
Course Code	Course Type	Course Name	Teaching Scheme
			Credit
	PEC	Front End Development with React JS (Theory + Practical)	5

Course Outcomes	
At the end of this course, students will be able to:	
C O 1	Develop dynamic and interactive web applications using React JS.
C O 2	Implement component-based architecture to create reusable UI components.
C O 3	Manage state effectively using React Hooks and Redux.
C O 4	Implement client-side routing and navigation using React Router.
C O 5	Build scalable and maintainable web applications using best practices in React development

Course Content	
Unit No.	Topics
1	Introduction to React JS
	Overview of React JS, Virtual DOM, JSX syntax, Setting up a React development environment, Creating and rendering components, Introduction to React Hooks.
2	Component-Based Architecture
	Understanding component-based architecture, Class components vs. Functional components, Props and state in React, Component lifecycle methods, Conditional rendering and handling events.
3	State Management with Redux

	Introduction to Redux, Managing global state with Redux, Actions, reducers, and the store, Connecting Redux with React applications, Asynchronous actions and middleware.
4	React Router and Client-Side Routing
	Introduction to React Router, Setting up routes in React applications, Nested routes and route parameters, Programmatic navigation, Handling route transitions and redirects.
5	Building Real-World Applications
	Building CRUD applications with React, Integrating external APIs, Authentication and authorization in React applications, Optimizing performance in React, Testing React components.

List of Practical Experiments

1. Set up a React development environment using Create React App or a similar tool.
2. Create a simple React application that demonstrates the use of JSX syntax to render elements.
3. Develop a React component that displays a welcome message and render it in the main application file.
4. Implement a React application using functional components and demonstrate the use of React Hooks (useState, useEffect).
5. Create a class component in React that manages its own state and lifecycle methods (componentDidMount, componentDidUpdate, componentWillUnmount).
6. Develop a React application that uses props to pass data from a parent component to a child component.
7. Implement conditional rendering in a React component to display different content based on state or props.
8. Create an event handling function in a React component to handle user interactions such as button clicks or form submissions.
9. Set up a Redux store in a React application and define actions, reducers, and the store.
10. Connect a React component to the Redux store and use actions to update the global state.
11. Implement asynchronous actions in Redux using middleware like redux-thunk or redux-saga.
12. Set up React Router in a React application and define multiple routes for different components.
13. Create nested routes in a React application to demonstrate the concept of route parameters.
14. Implement programmatic navigation in a React application to navigate to different routes based on user actions.
15. Handle route transitions and redirects in a React application using React Router.
16. Build a simple CRUD (Create, Read, Update, Delete) application using React and demonstrate basic CRUD operations.
17. Integrate an external API into a React application to fetch and display data from a remote source.
18. Implement authentication and authorization in a React application using a library like Firebase or Auth0.
19. Optimize the performance of a React application by using techniques such as code splitting, memoization, and lazy loading.
20. Write unit tests for React components using a testing library.

Reference Books	
1.	"Learning React: A Hands-On Guide to Building Web Applications Using React and Redux" by Kirupa Chinnathambi, Addison-Wesley Professional.
2.	"React.js Essentials" by Artemij Fedosejev, Packt Publishing.
3.	"Redux in Action" by Marc Garreau and Will Faurot, Manning Publications.
4.	"React Router Quick Start Guide" by Sagar Ganatra, Packt Publishing.
5.	"Testing React: A Practical Guide to Testing React Applications with Jest and Enzyme" by Artemij Fedosejev, Packt Publishing.

Course Code	Course Type	Course Name	Teaching Scheme
			Credit
		E Commerce & Digital Marketing	5

E Commerce & Digital Marketing

Unit I: Introduction to Digital Marketing

Meaning, Definition, Need of DM, Scope of DM, History of DM, Concept and approaches to DM, Examples of good practices in DM, Email Marketing, Need for Emails, Types of Emails, options in email advertising, Mobile Marketing, Overview of the B2B and B2C Mobile Marketing.

Unit II: Introduction to Digital Sales and E-commerce

Understanding the fundamental concepts of digital sales and e-commerce optimization. Evolution of digital sales, the impact of e-commerce on businesses, and the role of digital channels in sales strategies. Understanding digital sales channels, key e-commerce platforms, and the benefits of integrating digital technologies into sales processes. Overview of E-Commerce- Definition, Benefits of E-Commerce, Difference between ECommerce and Traditional Commerce, E-Commerce framework

Unit III: E-commerce Platforms and Tools

Various e-commerce platforms and tools essential for optimizing sales in the digital landscape. Popular platforms such as Shopify, Magento, and WooCommerce, along with tools for analytics, CRM integration, and payment gateways. How to select the right platform based on business needs and implementing tools for effective e-commerce management

Unit IV: E-commerce Optimization Strategies

Strategies to optimize e-commerce performance and maximize sales (E-Commerce Listing Optimization)- Product search term, Product description, Product image, Product features, Product Title; Do's and Don'ts of listing optimization strategy. Techniques for improving website usability, enhancing user experience, optimizing product listings for search engines, and implementing conversion rate optimization (CRO) strategies. A/B testing, customer journey mapping, and personalization techniques to enhance the ecommerce experience

Unit V: Digital Sales Management and Automation

Explores the digital sales management practices and automation tools to streamline sales processes and drive efficiency. Sales funnel management, lead generation strategies, email marketing automation, customer relationship management (CRM) systems, and using data analytics for sales insights. Sales automation tools like chatbots, sales engagement platforms, and AI-driven sales solutions to enhance digital sales effectiveness

Course	<i>Excel Analytics</i>	Semester - II
Type of Course		
Prerequisite	<i>No prerequisite required</i>	
Course Objective	<ul style="list-style-type: none"> • Provide foundational knowledge of MS Word, including document formatting, table creation, and printing. • Develop skills for creating, formatting, and enhancing PowerPoint presentations. • Introduce Excel basics such as data entry, formula setting, and spreadsheet formatting. • Explore advanced Excel functions, data management, and analysis techniques. 	

Teaching Scheme (Contact Hours)				*Examination Scheme				
Lecture	Tutorial	Lab/Practical	Credit	Theory Marks		Practical Marks		Total Marks
				External Mark	Internal Marks	External Mark	Internal Marks	

SEE- Semester End Examination, **CIA-** Continuous Internal Assessment (It consists of Assignments / Seminars / Presentations / MCQ Tests, etc.) * Evaluation criteria as per university norms.

Course Content	
Sr.	Topics
1	<p><i>Introduction to MS Office - MS Word :</i> <i>MS Word - Working with Documents, Formatting Documents, Setting Page style, Creating Tables-, Drawing, Office tools, . Printing Documents,</i></p> <p><i>Introduction to MS Office-MS Power Point :</i> <i>Creating a presentation, Formatting a Presentation, Adding Effects to the Presentation, Printing Handouts, Creating Presentation, Saving Presentation Files, Master Templates & Re-usability, Slide Transition, Printing Handouts – Operating with MS Power Point files / slides.</i></p>
2	<p><i>Introduction to MS Office – MS Excel</i> <i>Entering & Deleting Data, Setting Formula, Formatting Spreadsheet, Working with sheets, Charts, Printing.</i></p> <p><i>Understanding formulas and functions, including how to create formulas with multiple operators, insert and edit functions, and toggle between auto and manual calculation. Students will learn to define, use, and manage named ranges, display and trace formulas, and address formula errors effectively.</i></p>
3	<p><i>Types of functions: logical functions such as IF, financial functions like PMT, and database functions such as DSUM. It also covers lookup functions, notably VLOOKUP, along with user-</i></p>

	<i>defined and compatibility functions. Students will explore different categories of functions, including financial, date & time, math & trig, statistical, lookup & reference, database, text, logical, and information functions.</i>
4	<i>Working with Data Ranges in MS Excel, Sorting by One Column, Sorting by Colors or Icons, Sorting by Multiple Columns, Sorting by a Custom List, Filtering Data, Creating a Custom AutoFilter, Using an Advanced Filter. Working with PivotTables : Creating a PivotTable, Specifying PivotTable Data, Changing a PivotTable's Calculation, Filtering and Sorting a PivotTable, Working with PivotTable Layout, Grouping PivotTable Items, Updating a PivotTable, Formatting a PivotTable, Creating a PivotChart, Using Slicers, Sharing Slicers Between PivotTables.</i>
5	<i>Analyzing and Organizing Data : Creating Scenarios, Creating a Scenario Report, Working with Data Tables, Using Goal Seek, Using Solver, Using Text to Columns, Grouping and Outlining Data, Using Subtotals, Consolidating Data by Position or Category, Consolidating Data Using Formulas.</i>

Course Outcomes

At the end of this course, students will be able to:

CO1	<i>Create, format, and print documents effectively in MS Word.</i>
CO2	<i>Develop, enhance, and manage presentations using MS PowerPoint.</i>
CO3	<i>Perform data entry, formula creation, and spreadsheet formatting in MS Excel.</i>
CO4	<i>Utilize advanced functions, manage data ranges, and create PivotTables and PivotCharts for data analysis.</i>

Reference Books

1.	<i>"Microsoft Word 2019 Step by Step" by Joan Lambert</i>
2.	<i>"Microsoft PowerPoint 2019 Step by Step" by Joan Lamber</i>
3.	<i>"Microsoft Excel 2019 Step by Step" by Curtis Frye</i>
4.	<i>"Excel 2019 For Dummies" by Greg Harvey</i>
5.	<i>"Excel 2019 Bible" by Michael Alexander, Richard Kusleika, and John Walkenbach</i>
6.	<i>"Excel PivotTables and PivotCharts (Excel 2019)" by Paul McFedries</i>