Beginner Frontend Development with React

Description:

This course introduces students to modern frontend development using **React**, one of the most popular libraries for building dynamic, component-based user interfaces. Students will explore React fundamentals, component architecture, hooks, routing, state management, and integration with APIs. By the end of the course, students will build and deploy a complete, responsive React application using modern development tools and best practices.

Learning Outcomes:

By the end of this course, students will:

- Understand the fundamentals of React, JSX, and functional components.

- Manage application state using React hooks (useState, useEffect, etc.).

- Implement routing for navigation in single-page applications using react-router-dom.

- Build forms with validation and manage user input.

- Fetch and integrate data from APIs using asynchronous JavaScript and hooks.

- Structure scalable applications using reusable components.

- Deploy a production-ready React application.

Course Duration:

- **Total Duration:** 6 Weeks

- **Sessions per Week:** 2 sessions

- **Session Duration:** 1.5 hours each

- **Total Contact Hours:** 18 hours (plus optional assignments and practice)

6-Week Course Plan:

Week 1: Introduction to React & JSX

Topics Covered:

- Setting up development environment with create-react-app

- Introduction to JSX and Virtual DOM

- Functional components and props

- Rendering UI elements dynamically

Deliverables:

- Initial React app running locally

- Header, footer, and layout components

Week 2: State, Events & Conditional Rendering

Topics Covered:

- Managing state with useState

- Handling events in React

- Conditional rendering

- Lists and map() function for rendering components

Deliverables:

- Dynamic list rendering app
- State-based UI changes (like a counter or to-do list)

Week 3: Hooks & Side Effects

Topics Covered:

- Using useEffect for side effects
- Component lifecycle overview (via hooks)
- Creating reusable components
- Component composition

Deliverables:

- App with API call using fetch() inside useEffect
- Reusable card or list components

Week 4: Routing & Navigation

Topics Covered:

- Setting up routing using react-router-dom
- Route components and nested routes
- Navigation menus
- 404 and fallback routes

Deliverables:

- Multi-page React app with navigation

- Routing-based dynamic views

Week 5: Forms & API Integration

Topics Covered:
- Controlled vs uncontrolled components
- Handling form inputs and validation
- Posting data to APIs
- Error handling in async calls

Deliverables:
- Form that submits data to an API
- Input validation with feedback

Week 6: Final Project & Deployment

Topics Covered:
- Planning and building a complete React application
- App optimization techniques (lazy loading, memoization)
- Deployment using Netlify, Firebase, or Vercel

Deliverables:
- Full React application (e.g., blog, to-do, mini dashboard)
- Code pushed to GitHub
- App deployed live

Final Deliverables:

- Deployed, functional React application

- Clean and modular codebase on GitHub

- Demonstrable frontend skills for job interviews

- CodeHills Certificate of Completion

Course Fees (Pakistan):

- **Standard Fee:** PKR 10,000