KOENIG SOLUTIONS · COURSE OUTLINE

Learn Web Programming with HTML, CSS, and React JS (JS Institute)

Learn to design, style and script websites with HTML, CSS and JavaScript, then build interactive user interfaces with React JS.

9 Days	9	53	31
DURATION	MODULES	TOPICS	HANDS-ON ACTIVITIES

COURSE OVERVIEW

This course covers web design concepts including layout, navigation and sitemap creation, followed by HTML and XHTML fundamentals, CSS styling and Bootstrap. It then introduces JavaScript, DOM manipulation, jQuery and working with REST APIs through HTTP requests. The final modules focus on React JS, covering environment setup, TSX, props and state, event handling, conditional rendering, and working with lists, keys and forms.

WHO THIS COURSE IS FOR

- **Web Designers**
- **Front-End Developers**
- **UI Developers**
- **Aspiring Web Programmers**
- **JavaScript Developers**

LEARNING OBJECTIVES

- Apply effective web design concepts and navigation planning
- Build web pages using HTML, XHTML and HTML5 features
- Style web pages using CSS and Bootstrap components
- Implement client-side validation and DOM manipulation with JavaScript
- Interpret REST API structure and HTTP request methods
- Configure a React project using create-react-app
- Develop React components using props, state and TSX
- Implement event handling, conditional rendering and forms in React

COURSE SYLLABUS

9 Modules, 53 Topics

01

3 Lab Problems

Web Design Concepts

TOPICS

- Concepts of effective web design
- **Web design issues:** browser, bandwidth, and cache
- Display resolution
- Look and feel of the website
- Page layout and linking
- User-centric design
- Sitemap creation
- Planning and publishing websites
- Designing effective navigation

02

3 Lab Problems

HTML Basics and XHTML

TOPICS

- **Basics of HTML:** formatting, fonts, comments
- Color, hyperlinks, lists, tables, and images
- Forms
- XHTML concepts
- Meta tags, character entities
- Frames and frame sets
- Browser architecture and website structure
- HTML5 features

03

3 Lab Problems

CSS Basics

TOPICS

- Need for CSS
- CSS syntax and structure
- **Using CSS:** background images, colors, and text properties
- Fonts, borders, margins, and padding
- Positioning with CSS
- Overview of CSS3 features
- Introduction to Bootstrap

04

3 Lab Problems

JavaScript Basics and DOM Manipulation

TOPICS

- Variables, conditions, loops, and functions
- Pop-up boxes
- JavaScript objects and DOM manipulation
- Event handling
- Writing client-side validation code
- Use jQuery for UI Interaction and Effects
- Use of Ajax and JSON

05

3 Lab Problems

Introduction to REST API

TOPICS

Introduction to REST API · HTTP requests (GET, POST, DELETE, PUT) · API structure and usage

06

4 Lab Tasks

Introduction to React JS & Environmental Setup

TOPICS

- What is React JS?
- React with TypeScript
- React With JavaScript
- Introduction to Single Page Applications (SPA)
- DOM vs Virtual DOM
- Advantages and Disadvantages of React
- React Project Setup using create-react-app

07

4 Lab Tasks

React Basics - TSX, Props, and State

TOPICS

- Introduction to TSX and its syntax
- Difference between functional and class components
- Passing data between components using props
- Introduction to state in React and useState hook

08

4 Lab Tasks

Event Handling and Conditional Rendering

TOPICS

- Understanding the React Event System
- Handling events in functional components
- Passing arguments to event handlers
- Conditional rendering using logical operators and ternary expressions

09

4 Lab Tasks

Lists, Keys, and Forms in React

TOPICS

- Rendering lists using the map() method
- Understanding Keys in lists and their importance
- Controlled vs Uncontrolled Components in forms
- Handling form inputs and submissions

HANDS-ON ACTIVITIES

Practise What You Learn

#	MODULE	ACTIVITY
01	**Web Design Concepts**	LAB PROBLEMS ■ **Website Review:** Analyze the design of two websites (one fast-loading and one slow-loading). Identify key design issues affecting performance. ■ **Sitemap Design:** Create a sitemap and design the page layout for a five-page personal blog ■ **Navigation Flow:** Build a basic HTML mock-up of an e-commerce website's homepage, including a navbar with links to "Home," "Products," "Contact," and "About Us."
02	**HTML Basics and XHTML**	LAB PROBLEMS ■ **Portfolio Webpage:** Create a simple HTML portfolio page with sections for About Me, Skills, and Contact. Use lists to display skills and hyperlinks to projects. ■ **Feedback Form:** Develop a feedback form with fields for name, email, and feedback message. Use meta tags to improve page SEO. ■ **HTML5 Features:** Create a webpage with an embedded video, audio player, and canvas drawing
03	**CSS Basics**	LAB PROBLEMS ■ **Styled Webpage:** Use CSS to style the portfolio page from Day 2. Apply background colors, custom fonts, and border styles. ■ **Responsive Image Gallery:** Create a photo gallery with CSS grid/flexbox. Ensure the gallery is responsive across different screen sizes. ■ **Bootstrap Navbar:** Build a basic webpage with a Bootstrap navbar and footer. Include links to Home, About, and Contact pages.

#	MODULE	ACTIVITY
04	**JavaScript Basics and DOM Manipulation**	**LAB PROBLEMS** ■ **Form Validation:** Add client-side JavaScript validation to the feedback form from Day 2. Validate email format and ensure all fields are filled. ■ **Interactive Webpage:** Create a webpage that changes the background color each time the user clicks a button ■ **Simple Calculator:** Develop a calculator with buttons for addition, subtraction, multiplication, and division. Use JavaScript to handle operations and display the result dynamically.
05	**Introduction to REST API**	**LAB PROBLEMS** ■ **Weather Application:** Build a webpage that retrieves weather information for a user-entered city using a public weather API (GET request) ■ **User List App:** Fetch and display a list of users from a public API (e.g., JSONPlaceholder). Include a button to refresh the user list. ■ **Simple Product Manager:** Develop a basic webpage where users can add products to a list (locally). Implement a POST request to simulate saving data through an API.
06	**Introduction to React JS & Environmental Setup**	**LAB TASKS** ■ Set up a React environment using create-react-app ■ Explore the project directory structure ■ Create a basic functional component to display a welcome message ■ Compare the working of Virtual DOM vs Real DOM by inspecting browser tools
07	**React Basics - TSX, Props, and State**	**LAB TASKS** ■ Create a product card component that uses props to display product information (name, price, description) ■ Implement state management using the useState hook to create a counter ■ Build a component that changes its content based on a state variable ■ Differentiate between props and state usage with practical examples
08	**Event Handling and Conditional Rendering**	**LAB TASKS** ■ Implement a click event to update a counter value dynamically ■ Create a toggle component to show or hide content with a button ■ Use conditional rendering to display messages based on input state ■ Handle form events (like onChange and onSubmit) using event handlers
09	**Lists, Keys, and Forms in React**	**LAB TASKS** ■ Create a list of items (e.g., names) and render them using the map() function ■ Assign unique keys to items to prevent rendering errors ■ Build a controlled form that takes user input and displays it on submission ■ Implement form validation to ensure required fields are filled

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

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Ready to Get Started?

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