React js Course Syllabus
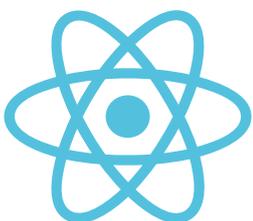
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About Us

IDMTECHPARK global retail & corporate training solutions provider in Coimbatore, Erode, Trichy & Salem that offers a comprehensive range of training and placement services for both fresher's and professionals seeking new opportunities. The company commenced its IT training business in 2016. A pioneer in IT education, over the years, we have trained over 50k students. Idmtechpark has a wide range of courses, maintains education standards & provides placement assistance.

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About IDMTechpark Education Quality

IDMTECHPARK is managed and developed by industry specialists with more than 8 years of expertise in the field. IDMTECHPARK offers a staff of highly skilled professional trainers who deliver effective IT training in a friendly setting, concentrating on the needs of each individual to help them succeed in a demanding work world. In the book of career and success, our staff never leaves a page unturned.

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IDMTECHPARK's versatile instructor-led training class rooms and lower-class sizes enable people to engage more easily and absorb knowledge, resulting in remarkable results for both themselves and the organizations for which they work. Our training programmes are adaptable and customizable to ensure that each participant gets the most out of their time with us. IDMTECHPARK focuses in providing hands-on IT training in over 30 different courses.

- We teach in-demand courses
- We provide impactful learning material
- Our teachers are well-selected & trained
- We follow world-class teaching methods
- Our courses include E-Projects
- We conduct technical workshops
- Exams are held and based on Exams providing Certification
- Certificates are recognized the world over
- Our course timings are flexible
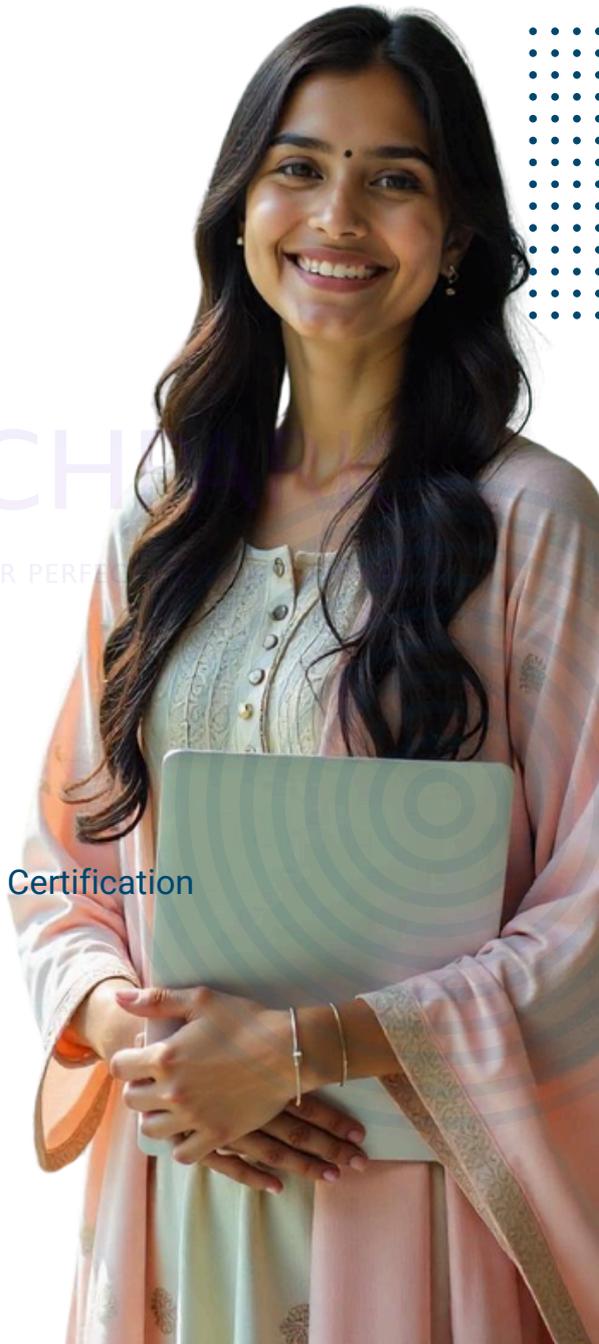
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Our Recent Placement

Idmtechpark assists students in getting job placements on successful completion of their courses. Idmtechpark also provides recruitment assistance to organizations. Idmtechpark students are shortlisted based on the organization's requirement. To make students job-ready, Idmtechpark conducts workshops e.g. How to do Group Discussions, how to behave in a Personal Interview. From time to time, job fairs & campus recruitments are conducted. Workplace skills such as time management, making effective presentations and communication skills are also provided. All this helps students find appropriate jobs in the IT industry while also helping save companies recruitment costs.

Krishnaveni M

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Gray Matter

Ramesh
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MODULE 1

Introduction to React

● Overview of React and its Benefits

● Understanding the Component-Based Architecture

● Setting Up Development Environment (Node.js, npm, and Create React App)

● The React Development Workflow

● First React Application: Understanding the index.js and App.js

● JSX Syntax and How It Works

● Rendering Components with React

MODULE 2

JSX and Rendering Elements

● Introduction to JSX (JavaScript XML)

● JSX Rules and Syntax

● Embedding Expressions in JSX

● Rendering Lists with map()

● Conditional Rendering in JSX (if, ternary operator, &&)

● React Fragment (<></>) and Rendering Multiple Elements

● The dangerouslySetInnerHTML Prop

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MODULE 3

Understanding React Components

- Introduction to React Components

- Functional Components vs. Class Components

- Props and Passing Data to Components

- The children Prop in React

- Component Nesting and Composition

- Returning Multiple Elements from Components

- PropTypes and Type Checking

MODULE 4

State and Handling User Input

● Understanding State in React

● Defining State with useState (for Functional Components)

● Handling User Input: Forms and Controlled Components

● Updating State with Event Handlers

● State and Re-rendering of Components

● Passing State Between Parent and Child Components

MODULE 5

Lifecycle Methods (Class Components)

● Introduction to React Component Lifecycle

● componentDidMount(), componentDidUpdate(), and componentWillUnmount()

● Working with Lifecycle Methods for Data Fetching

● Updating State Based on Component Lifecycle

● Using Lifecycle Methods to Integrate Third-Party Libraries

MODULE 6

React Hooks Introduction

● Introduction to React Hooks

● The useState Hook in Functional Components

● The useEffect Hook for Side Effects and Data Fetching

● Rules of Hooks

● Using Multiple State Variables with useState

● Cleaning up Effects with useEffect

MODULE 7

Event Handling in React

- Introduction to Event Handling in React

- React's Synthetic Event System

- Handling Mouse, Keyboard, and Form Events

- Event Binding in JSX

- Preventing Default Behavior with event.preventDefault()

- Handling Custom Events

MODULE 8

Conditional Rendering in React

● Introduction to Conditional Rendering

● Using if, else, and switch Statements

● Ternary Operator and Short-Circuit Evaluation in JSX

● Conditional Components and Lazy Loading Components

● Handling Loading States in React Applications

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MODULE 9

Lists and Keys in React

● Rendering Lists of Data Dynamically

● The map() Function for Lists

● Keys in React: Why They Are Important

● Unique Keys for List Items

● Handling Dynamic Lists and Arrays in React

MODULE 10

Forms and Controlled Components

● Introduction to Forms in React

● Controlled vs Uncontrolled Components

● Handling Form Elements (Input, Textarea, Select)

● Handling Form Submission in React

● Validating Forms with React

● Managing Multiple Input Fields in Forms

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MODULE 11

Context API in React

● Introduction to Context API

● Creating a Context with React.createContext()

● Using the useContext() Hook for Global State

● Passing and Consuming Context Data

● Sharing State Between Components with Context API

● Context Performance Optimization

MODULE 12

React Router Basics

● Introduction to React Router for Navigation

● Setting Up React Router (BrowserRouter, Route, Link, Switch)

● Navigating Between Pages with Links and Routes

● Route Parameters and Query Strings

● Nested Routes in React Router

● Redirects and Programmatic Navigation (history.push())

MODULE 13

Advanced React Router

● Dynamic Routing and Route Matching

● useHistory, useLocation, useParams, and useRouteMatch Hooks

● Handling Protected Routes (Authentication Flow)

● Code-Splitting and Lazy Loading Routes

● React Router for Single-Page Applications (SPA)

● Managing Scroll Position and Navigation State

MODULE 14

React State Management with Redux

● Introduction to State Management and Redux

● Understanding Actions, Reducers, and Store

● Setting Up Redux in React Applications

● Dispatching Actions and Updating State

● Using the Redux connect() Function

● Redux DevTools and Debugging Redux State

MODULE 15

Advanced Redux Concepts

● Middleware in Redux (Redux Thunk and Redux Saga)

● Asynchronous Actions with Redux

● Using createSlice() and createAsyncThunk() from Redux Toolkit

● Normalizing State in Redux

● Optimizing Redux Performance with Reselect

● Handling Nested State and Immutability in Redux

MODULE 16

Handling Side Effects in React

● Introduction to Side Effects and Data Fetching

● Managing Side Effects with useEffect()

● Fetching Data from APIs with fetch() or axios

● Managing Loading, Error, and Success States

● Synchronizing UI with Asynchronous Operations

● Handling Cleanup in Effects (e.g., cancelling API requests)

MODULE 17

Component Styling in React

● Introduction to Styling in React

● Inline Styles in React Components

● Using CSS Stylesheets in React

● CSS Modules for Scoped CSS in React

● Styled Components and Emotion (CSS-in-JS)

● Managing Responsive Design with React and CSS

MODULE 18

Testing React Components

● Introduction to Testing in React

● Setting Up Testing Environment with Jest and React Testing Library

● Writing Unit Tests for Functional and Class Components

● Mocking Functions and Components

● Simulating User Interactions with fireEvent()

● Asynchronous Testing with waitFor(), findBy*()

● Snapshot Testing and Coverage Reports

MODULE 19

React Performance Optimization

● React Rendering Process and Virtual DOM

● Understanding React Reconciliation

● Optimizing Re-renders with React.memo()

● Using useMemo() and useCallback() Hooks

● Virtualization for Large Lists with react-window or react-virtualized

● Code Splitting with React.lazy() and Suspense

● Lazy Loading Images and Components

MODULE 20

Error Boundaries in React

● Introduction to Error Boundaries in React

● Creating and Using Error Boundaries in React Components

● Handling JavaScript Errors in React Application

● Fallback UI with Error Boundaries

● Logging and Reporting Errors in Production

● Integrating with Error Monitoring Services (Sentry)

MODULE 21

React with TypeScript

● Introduction to TypeScript with React

● Setting Up TypeScript in React Project

● Typing Props and State in Functional and Class Components

● Using TypeScript with Hooks (useState, useEffect, etc.)

● Type Inference and Type Aliases

● Handling TypeScript Errors and Best Practices in React

MODULE 22

Server-Side Rendering (SSR) with React

● Introduction to Server-Side Rendering

● Benefits and Challenges of SSR

● Setting Up Server-Side Rendering with Next.js

● Hydration Process in SSR

● Routing and Data Fetching in SSR

● Improving SEO with Server-Side Rendering

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MODULE 23

Progressive Web Apps (PWA) with React

● Introduction to Progressive Web Apps

● Setting Up a PWA with Create React App

● Service Workers and Caching for Offline Use

● Push Notifications in PWAs

● Adding PWA Features to an Existing React App

● Performance Optimization for PWAs

MODULE 24

React Native for Mobile Development

● Introduction to React Native

● Setting Up the React Native Development Environment

● Building a Basic Mobile App with React Native

● Components and Navigation in React Native

● Styling and Layouts in React Native

● Integrating APIs and Native Modules in React Native

MODULE 25

Deploying and Managing React Applications

● Preparing React Applications for Production

● Building the React App with npm run build

● Deployment Options: Netlify, Vercel, GitHub Pages, Heroku

● Continuous Integration and Deployment (CI/CD) for React

● Optimizing for SEO and Accessibility

● Managing Environment Variables and Configurations

Thank You

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