Advanced Client Side Web Framework
(Moocs)

COURSE CODE: 20ITH1L2

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Pre-requisites: Web Programming

COURSE OUTCOMES:

At the end of the course the student shall be able to

CO1: Describe the working environment for React. (L2)

CO2: Use React JSX and components. (L3)

CO3: Illustrate classes and events in React. (L3)

CO4: Use forms and styles in React. (L3)

CO5: Apply routing using Router in React. (L3)

UNIT-I **(6 LECTURES)**

Introduction to React: What is React, How React Works, React Directly in HTML, Setting up a React Environment, Run the React Application.

Javascript for React: Variables, Functions, Objects and Arrays, asynchronous javascript, ES6 modules.

Learning Outcomes: At the end of the module student will be able to:
1. explain how react works. (L2)
2. describe objects and arrays. (L2)
3. discuss modules in ES6. (L2)

UNIT-II **(7 LECTURES)**

React JSX: Use of JSX, Coding using JSX, Expressions in JSX, Inserting a Large Block of HTML, One Top Level Element.

React Working: Page setup, React elements, React DOM.

React Components: Creating First Component, Function Component, Rendering a Component, Props, Components in Components, Components in Files.

Learning Outcomes: At the end of the module student will be able to:
1. describe coding using JSX. (L2)
2. use React elements. (L3)
3. show how components are rendered in React. (L3)

UNIT-III **(7 LECTURES)**

React class: Creating a Class Component, Component Constructor, Props, Props in the Constructor, React Class Component State, Creating the state Object, Using the state Object, Changing the state Object, Lifecycle of Components.

React Conditionals and Lists.

Incorporating Data: Requesting Data, Render Props, Virtualized lists.

React Events: Adding Events, Passing Objects, React Event Object.

Learning Outcomes: At the end of the module student will be able to:
1. use classes in React. (L3)
2. explain passing of data using props. (L2)
3. apply event handling in React. (L3)

UNIT-IV   **(6 LECTURES)**

React forms and UI: Lists of Form components, Setup Controlled and Uncontrolled form components, Control Input elements, How to set default values on all formats of Input elements,ReactJS Form validations.
Styling React Using CSS: Writing styles**,** Inline styling, CSS stylesheets, CSS Modules

Learning Outcomes: At the end of the module student will be able to:
1. use lists in React.   (L3)
2. describe handling user input with forms.   (L2)
3. apply CSS for styling React elements. (L3)

UNIT-V   **(6 LECTURES)**

React Router: Router properties**,** Adding React Router, Folder Structure, usage, Using redirects, Pages and Components**.**
React Memo: Using React Memo
React Hooks: Usage, Hook Rules

Learning Outcomes: At the end of the module student will be able to:
1. apply routing in React using a router. (L3)
2. explain how memo is used in React. (L2)
3. use Hooks in React.   (L3)

TEXT BOOKS:

1. Alex Banks and Eve Porcello, *"Learning React"*, 2nd Edition, O'Reilly, 2020.

REFERENCES:

1. Mark Tielens Thomas, *"React in Action"*, 1st Edition, Manning Publisher, 2018.
2. Anthony Accomazzo et al., *"FullStack React"*, 1st Edition, Fullstack Publishing, 2020.

WEB-REFERENCE:

1. https://www.udemy.com/course/react-tutorial/