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| Course Code | **21CSL606** | CIE Marks | 50 |
| Course Type (Theory/Practical/Integrated) | Practical | SEE Marks | 50 |
|  |  | Total Marks | 100 |
| Teaching Hours/Week (L:T:P) | 0:0:2 | SEE | 3 Hours |
| Total Hours | 20 | Credits | 01 |
| **Course Learning Objectives:** The objective of the course is to   * To gain knowledge on designing static and dynamic web pages. * Able to validate web pages at client-side. * Gain knowledge on server side scripting * Understand the basics of React and create components and lifecycle * Develop applications using JSX and React. * Develop application using server session handling technique | | | |
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| **A–Demonstration (offline/virtual):**  A1.Create a webpage with HTML describing your department. Use paragraph and list tags. A2.Apply various colors to suitably distinguish key words. Also apply font styling like italics,  underline and two other fonts to words you find appropriate. Also use header tags. A3.Create links on the words e.g. “Wi-Fi” and “LAN” to link them to Wikipedia pages. A4.Insert an image and create a link such that clicking on image takes user to other page.  A5.Change the background color of the page. At the bottom create a link to take user to the top of the page.  **B–Exercise (compulsorily to be conducted):**  B1. i Create a table to show your class time-table.(CSS and HTML)  ii Include course name, instructors, days of week and time slots. Include at least 5 courses and make sure the table is properly formatted with appropriate table headers, rows and cells.  B2. i Write an HTML page that contains a selection box with a list of 5 countries,  ii when the u user Select a country its capital should be printed next to the list;  iii Add CSS to Customize the properties of font of the capital(color,bold,and font size)  B3. Write a JavaScript to design a simple calculator to perform the following operations: sum, product, difference and quotient (Java Script)   1. Build your own Button component and render it three times. On user click, it should alert which button was clicked. (React JS). 2. Use the useState React hook to track how many times a button is clicked, and display the number   B4. create a custom component that displays each item from ['dog', 'cat', 'chicken', 'cow', 'sheep', 'horse']  Instead of using the <ul> and <li> HTML tags, create a custom component that accepts a list as its prop, and renders it accordingly.  B5. Build a form that accepts a first name and a last name. And instead of a boring "Submit" button, make a button that says "Greet Me" that when clicked, will alert "Hello [first name] [last name]!".  B6. Create a custom component for rendering each joke present in an array. Using the map function, map through each object in the array. Use the custom component to render each object.  **C–Structured Enquiry (compulsorily any 4 to be conducted):**  C1. Create an HTTP server listening on port 1337, which sends Hello, World! to the browser and using Express.  C2. Create a server which send the response as listed below.  i)Send response using status() function.  ii)Send some particular data to the client using send() function   1. Sending the JSON response from the server to the client using json()   Store and retrieve the data with Node.js, Express and MongoDB.  C3. Implement a node.js and MongoDB application using the express framework and mongoose ORM that supports pagination for retrieving and displaying posts from the database.  C4. Create a website which reports the weather for a specific city using NodeJS to send API requests to Accuweather, and pug and CSS to present the weather to the users.  C5. Create a Tic Tac Toe game using React JS | | | |

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| **Course Outcomes:** At the end of the course the student will be able to: | |
| **21CSL606.1** | Apply HTML and CSS syntax and semantics to build web pages. |
| **21CSL606.2** | Construct and visually format forms using HTML and CSS. |
| **21CSL606.3** | Develop Client-Side Scripts using JavaScript. |
| **21CSL606.4** | Apply the concepts of React to create Components. |
| **21CSL606.5** | Develop applications using React JSX. |
| **21CSL606.6** | Design applications using the Lifecycle methods and Component. |

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| **Sl.**  **No.** | **Title of the Book** | **Name of the**  **Author/s** | **Name of the**  **Publisher** | **Edition**  **and Year** |
| **Textbooks** | | | | |
| 1 | Fundamentals of Web Development | Randy Connolly, Ricardo Hoar | Pearson Education India | 1stEdition, 2015 |
| 2 | React: Up & Running: Building Web Applications | Stoyan Stefanov | O'Reilly Media, Inc. | 2ndEdition, 2021 |
| **Reference Books** | | | | |
| 1 | Learning PHP, MySQL & JavaScript with  jQuery, CSS and HTML5 | Robin Nixon | O’Reilly Publications | 4th Edition, 2015 |
| 2 | Professional JavaScript for Web Developers | Nicholas C Zakas | Wrox/Wiley India | 3rdEdition, 2012 |
| 3 | Fullstack React: The Complete Guide to ReactJS and Friends | Anthony Accomazzo, Ari Lerner, Nate Murray, Clay Allsopp, David  Gutman, Tyler McGinnis | Fullstack.io | 1st Edition, 2017 |

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| **Web links and Video Lectures (e-Resources):**   * **HTML Tutorial For Beginners 2023:** https:/[/www.](http://www.youtube.com/watch?v=OUjU--gVylE)y[outube.com/watch?v=OUjU--gVylE](http://www.youtube.com/watch?v=OUjU--gVylE) * **CSS Tutorial - Zero to Hero:** https:/[/www](http://www.youtube.com/watch?v=1Rs2ND1ryYc).[youtube.com/watch?v=1Rs2ND1ryYc](http://www.youtube.com/watch?v=1Rs2ND1ryYc) * **JavaScript Full Course:** https:/[/www](http://www.youtube.com/watch?v=o1IaduQICO0).[youtube.com/watch?v=o1IaduQICO0](http://www.youtube.com/watch?v=o1IaduQICO0) * **What Is ReactJS?:** https:/[/www](http://www.youtube.com/watch?v=Y6aYx_KKM7A).[youtube.com/watch?v=Y6aYx\_KKM7A](http://www.youtube.com/watch?v=Y6aYx_KKM7A) * **React JS Full Course For Beginners 2020:**   <https://www.youtube.com/watch?v=CI2kX2EFhWc>   * **Workshop trial**: [https://www.coursera.org/programs/faculty-development-workshop-trial-2-](https://www.coursera.org/programs/faculty-development-workshop-trial-2-c9g2g/projects/basic-server-nodejs) [c9g2g/projects/basic-server-nodejs](https://www.coursera.org/programs/faculty-development-workshop-trial-2-c9g2g/projects/basic-server-nodejs) * **What Is Node.js?:** https:/[/www](http://www.youtube.com/watch?v=8u1o-OmOeGQ).[youtube.com/watch?v=8u1o-OmOeGQ](http://www.youtube.com/watch?v=8u1o-OmOeGQ) * **Node.js:** <https://nodejs.dev/en/learn/> |

## Course Articulation Matrix

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| **Course Outcomes (COs)** | **Program Outcomes (POs)** | | | | | | | | | | | | | | |
| **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |  |
| **21CSL606.1** | 2 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **21CSL606.2** | 3 |  | 1 | 1 |  |  |  |  |  |  |  |  |  |  |  |
| **21CSL606.3** | 2 | 1 |  |  | 1 |  |  |  |  |  |  | 1 |  |  |  |
| **21CSL606.4** | 2 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **21CSL606.5** | 1 |  |  |  |  |  |  |  |  |  | 1 |  |  |  |  |
| **21CSL606.6** | 1 | 1 |  |  |  |  |  |  |  |  | 1 |  |  |  |  |

1: Low 2: Medium 3: High