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| <b>Department/Institute Name</b>     | Department of Computer Science and Engineering / Chitkara University Institute of Engineering & Technology |                       |   |
| <b>Program Name</b>                  | BE -Computer Science and Engineering   |                       |   |
| <b>Course Code</b>                   | CSL4209  |                       |   |
| <b>Course Name</b>                   | Client Side Technologies   |                       |   |
| <b>Lecture / Tutorial (per week)</b> | 4-0-0  | <b>Course Credits</b> | 4 |
| <b>Course Coordinator Name</b>       | Er. Nain Kanwal Kaur   |                       |   |

**1. Course Objectives**

By the end of the course, the student will be able to:

- 1: Differentiate between client and server side programming.
- 2: Apply the HTML and CSS concepts to create and design webpages.
- 3: Create the scripts using JavaScript.
- 4: Implement JavaScript to manipulate elements in the DOM.
- 5: Compare the functionality and support offered by JavaScript frameworks and libraries.
- 6: Define the basic concepts of AJAX.

**2. Recommended Books**

**RB1:** ‘Web Enabled Commercial Application Development using HTML, JavaScript, DHTML and PHP’ by Ivan Bayross, 4th Edition, BPB Publications.

**RB2:** ‘The Complete Reference HTML & XHTML’ by Thomas Powell, 5th Edition, Tata McGraw-Hill Company Limited.

**RB3:** ‘HTML 4.0’ by E. Stephen Mack, Janan Platt, Anaya Multimedia publication.

**RB4:** ‘Mastering HTML, CSS & JAVA Script Web Publishing’ by Laura Lemay, Rafe Coburn, Jennifer Kyrnin, 7<sup>th</sup> edition, SAMS publication.

**RB 5:** ‘Learning web designing: a beginner's guide to HTML, CSS, JavaScript, and web graphics’ by Niederst Robbins, 4<sup>th</sup> Edition, O'Reilly Publication.

**RB 6:** ‘jQuery in action’ by Bear Bibeault, 2<sup>nd</sup> Edition, dreamtech publication.

**RB7:** Html5 Black Book: Covers CSS3 Javascript Xml XHTML Ajax Php And JQuery by Kogent Learning Solutions Inc.

**3. Other readings and relevant websites**

| S.No. | Link of Journals, Magazines, websites and Research Papers           |
|-------|---|
| 1.    | <a href="https://www.w3schools.com/">https://www.w3schools.com/</a> |

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| 2. | <a href="http://www.quirksmode.org/dom/intro.html">http://www.quirksmode.org/dom/intro.html</a>                                 |
| 3. | <a href="https://www.codeschool.com/courses/front-end-foundations">https://www.codeschool.com/courses/front-end-foundations</a> |
| 4. | <a href="https://www.w3schools.com/jquery/">https://www.w3schools.com/jquery/</a>   |
| 5. | <a href="http://nptel.ac.in/courses/106105084/13">http://nptel.ac.in/courses/106105084/13</a>                                   |

#### 4. Course Plan

| Lecture Number  | Topics   | Recommended Book / Other reading material | Page numbers of Book(s)       |
|---|--|---|-------------------------------|
| 1   | Web programming and HTML5: Introduction to web programming, client server architecture, DNS, latest trends, static and dynamic content, WWW3C standards, difference between HTML & HTML5.  | RB1<br>RB2<br>RB3                         | 12-21<br>3-25<br>35-64        |
| 2   | Basics of HTML5, understanding document tags. HTML5 formatting: Formatting tags e.g. font, Bold, italic, super script, subscript, delete, mark etc.  | RB1<br>RB2<br>RB3                         | 21-28<br>171-188<br>189-202   |
| 3   | HTML5 Quotations: q tag, blockquote, Code, abbreviation, address, cite, bi-directional override tag, header, footer and output Tag, meta data and meta tag.  | LINK 1                                    |                               |
| 4-5   | Lists: Ordered, Unordered, Definition List. Introduction to LINK: anchor element, internal linking and external linking, attribute of anchor tag.  | RB1<br>RB2<br>LINK 1                      | 33-34,58-61<br>211-237        |
| 6-7   | Images: image basics, image tag, Image alignment, image map and all the attributes of image and map.   | RB1, RB2, LINK 1                          | 38-41,63<br>141-170           |
| 8-9   | Table: Table tag with attributes like width, alignment, cell spacing, cell padding, cell alignment, borders rules, rows, cells, rowspan, colspan, header, footer, body sections, captions and background images.                     | RB1<br>RB2<br>LINK 1                      | 47-52<br>197-210              |
| 10-11   | HTML Frames: Introduction to frameset tag, frame tag, iframes and respective attributes.   | RB1<br>RB2                                | 74-75<br>357-381              |
| 12-14   | Form: Creating form, add labels, text box, check box, radio buttons, password, pull down menus and button to a form , Use of clickable image as a submit button, pass information between forms (action ,method).                    | RB1<br>RB3<br>LINK 1                      | 410-431                       |
| <b>Activity 1 (Learn with pictures) based on topics of lecture no. 1-14</b> |  |   |                               |
| 15-17   | DHTML and CSS: Introduction to DHTML, introduction to CSS3, ways to Insert CSS in HTML document (External Style Sheet, Internal Style Sheet, Inline Styles), CSS id and class, div and span tag.                                     | RB1<br>RB2<br>LINK 1                      | 213<br>433-434,455            |
| 18-20   | CSS background: background color, background image (repeat horizontally or vertically, set position and no-repeat)<br>CSS Text: text color, text alignment, text decoration<br>CSS Font: style, family, Size<br>CSS lists, CSS Links | RB1<br>RB1<br>LINK 1                      | 214-216<br>269-289            |
| <b>ST-I (Syllabus covered from 1-20 lectures)</b>                           |  |   |                               |
| 21-22   | CSS Tables: Table borders, collapse borders, table width and height ,table text alignment, table padding, table color<br>CSS border: style, width, color   | RB1<br>RB2<br>RB3<br>LINK 1               | 217-218<br>290-300<br>443-476 |

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|   | CSS margin: margin, padding  |                      |                    |
| 23-24   | JavaScript: History of JavaScript, Different Implementations, Determining the Document Object Model, Uses for JavaScript, Incorporating JavaScript in HTML documents, Basic JavaScript Syntax, Data Types and Variables, Calculations and Operators.   | RB1<br>LINK 1        | 124-136            |
| 25-27   | Control Structures: Do While, While, For and For In, If Else, Switch, Break and Continue; Labels, built-in functions, user-defined functions, accessing an element by its id. Writing text to a document, Dialogue box.  | RB1<br>LINK 1        | 136-147            |
| <b>Activity 2 (Crossword puzzle) based on topics of lecture no. 23-27</b> |  |                      |                    |
| 28-29   | Event Handling: onblur, onchange, ondblclick, onclick, onfocus, onkeydown, onkeyup, onkeypress, onload, onunload, onmouseover, onmouseout, onmousedown, onmouseup, onmousemove, onreset, onselect, onsubmit.<br>JavaScript Errors and Troubleshooting.   | RB1<br>LINK 1        | 181-183            |
| 30-31   | Document Object Model: History of the DOM, Understanding the Document Object Model.<br>DOM Node Properties: childnodes, firstnode, lastnode, nodename, nodetype, nodevalue, parent node.<br>DOM node Methods: appendchild() and remove child(), createnode(), text type node creation, node removal, traversing document's Node. | RB1<br>RB1<br>LINK1  | 150-157<br>456-457 |
| 32  | JavaScript Objects: name, maths, string, date, array.  | LINK 1, LINK2        |                    |
| 33-34   | Window Object properties: closed, document, history, innerheight, innerwidth, length, location, navigator, outerheight, outerwidth, parent, self, status<br>Window object methods: alert(), blur(), close(), focus(), open(), resizeby(), resizeto().  | LINK 1<br>LINK2      |                    |
| 35  | Navigator object properties: appcodename, appname, appversion, cookieenabled, useragent,<br>Navigator methods: javaenabled(), taintenabled.  | LINK 1<br>LINK2      |                    |
| 36  | History object properties: length, history object<br>History object methods: back(), forward(), go().  | LINK 1<br>LINK2      |                    |
| 37-38   | Location object properties: host, hostname, href, path name, port, protocol, search, Location object<br>Location object methods: assign(), reload(), replace()   | LINK 1<br>LINK2      |                    |
| 39-40   | Form Validation: Data validation and constraint validation in HTML forms.  | LINK1                |                    |
| <b>ST-I (Syllabus covered from 21-40 lectures)</b>                        |  |                      |                    |
| 41-42   | jQuery: Introduction to jQuery, jQuery Syntax, jQuery Selectors, jQuery Events.  | LINK1, LINK 4<br>RB6 | 11-15              |
| 43-44   | jQuery Effects: jQuery Hide/Show, jQuery Fade, jQuery Slide, jQuery Animate, jQuery stop(), jQuery Callback, jQuery Chaining.  | LINK1, LINK 4<br>RB6 | 17-20              |
| 45-46   | jQuery HTML: jQuery Get, jQuery Set, jQuery Add, jQuery Remove, jQuery CSS Classes, jQuery css(),  | LINK1, LINK 4<br>RB6 | 30-37              |

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|   | jQuery Dimensions.                         |                      |       |
| 47-48   | jQuery AJAX: Introduction, get/post, load. | LINK1, LINK 4<br>RB6 | 40-45 |
| <b>ST-I (Syllabus covered from 1-48 lectures)</b> |  |                      |       |

**5. Evaluation Scheme (Theory):**

|               |                       |            |
|---------------|-----------------------|------------|
| Component 2*  | Sessional Tests (STs) | 40         |
| Component 3** | End Term Examination  | 60         |
|               | <b>Total</b>          | <b>100</b> |

\*There will be three sessional tests out of which best two will be considered for evaluation. Each test will be of 40 marks.

\*\*The End Term Comprehensive examination will be held at the end of semester. The mandatory requirement of 75% attendance in all theory classes is to be met for being eligible to appear in this component.

**6. Syllabus**

| Topics  | No of lectures | Weightage |
|---|----------------|-----------|
| Web Programming and HTML5: Introduction to web programming: Client Server Architecture, DNS, Latest Trends, Statics and Dynamic Content, W3C standards. Difference between HTML & HTML5.<br>Basics of HTML5, understanding Document – Tags<br>HTML5 formatting: All formatting tags e.g. font, Bold, italic, superscript, subscript, delete, mark etc. HTML5 Quotations: q tag, Blockquote, Code, abbreviation, address, cite, bi-Directional override tag, Header, footer and output tag. Meta data and meta tag. Lists: Ordered, Unordered, Definition Lists. Links: Introduction to LINK, anchor element, internal linking, external linking, attribute of anchor tag. | 5              | 10        |
| Images: image basics, image tag, Image alignment, image map.<br>Table: Table tag with all attributes like width, alignment, cell spacing, cell padding, cell alignment, borders rules, rows, cells, rowspan, colspan, header, footer, body sections, captions and background images.<br>HTML Frames: Introduction to frameset Tag, frame Tag, iframes and respective attributes. Forms: Creating form, add labels, text box, check box, radio buttons, password, pull down menus and button to a form, Use of clickable image as a submit button, Pass information between forms (action, method), meta data  | 9              | 18        |
| DHTML and CSS: Introduction to DHTML, introduction to CSS, ways to Insert CSS in HTML document (External Style Sheet, Internal Style Sheet, Inline Styles), CSS id and class, div and span  | 9              | 18        |

|  |    |    |
|--|----|----|
| <p>tag.<br/>           CSS background: background color, background image (repeat horizontally or vertically, set position and no-repeat). CSS Text: text color, text alignment, text decoration.<br/>           CSS Font: style, family, Size, CSS lists, CSS Links.<br/>           CSS Tables: Table borders, collapse borders, table width and height ,table text alignment, table padding, table color<br/>           CSS border: style, width, color. CSS margin: margin, padding.</p>  |    |    |
| <p>JavaScript: History of JavaScript, Different Implementations, Determining the Document Object Model, Uses for JavaScript, Incorporating JavaScript in HTML documents, Basic JavaScript Syntax, Data Types and Variables, Calculations and Operators. Control Structures: Do While, While, For and For In, If Else, Switch, Break and Continue; Labels, built-in functions, user-defined functions, accessing an element by its id.</p>  | 5  | 10 |
| <p>Event Handling: onblur, onchange, ondblclick, onclick, onfocus, onkeydown, onkeyup, onkeypress, onload, onunload, onmouseover, onmouseout, onmousedown, onmouseup, onmousemove, onreset, onselect, onsubmit.<br/>           JavaScript Errors and Troubleshooting.<br/>           Document Object Model: History of the DOM, Understanding the Document Object Model. DOM Node Properties: childnodes, firstnode, lastnode, nodename, nodetype, nodevalue, parent node. DOM node Methods: appendchild() and remove child(), createnode(), text type node creation, node removal, traversing document's Nodes. JavaScript Objects: Maths, String, Date, Array. Window Object properties: closed, document, history, innerheight, innerwidth, length, location, name, navigator, outerheight, outerwidth, parent, self, status. Window object methods: alert(), blur(), close(), focus(), open(), resizeby(), resizeto().</p> | 8  | 15 |
| <p>Navigator object properties: appcodename, appname, appversion, cookieenabled, online, platform, useragent. Navigator Oject methods: javaenabled(), taintenabled. History object properties-length, history object methods- back(), forward(), go(). Location object properties- host, hostname, href, path name, port, protocol, search, history object methods- assign(), reload(), replace().</p>   | 4  | 7  |
| <p>Form Validation: Data validation and constraint validation in HTML forms.</p>   | 2  | 3  |
| <p>jQuery Intro: jQuery Get Started, jQuery Syntax, jQuery Selectors, jQuery Events, jQuery Effects: jQuery Hide/Show, jQuery Fade, jQuery Slide, jQuery Animate, jQuery stop(), jQuery Callback, jQuery Chaining, jQuery HTML: jQuery Get, jQuery Set, jQuery Add, jQuery Remove, jQuery CSS Classes, jQuery css(), jQuery Dimensions.<br/>           jQuery AJAX: Introduction, get/post, load.</p>  | 10 | 19 |

**This Document is approved by:**

| Designation        | Name                 | Signature |
|--------------------|----------------------|-----------|
| Course Coordinator | Er. Nain Kanwal Kaur |           |

|                   |                   |  |
|-------------------|-------------------|--|
| Program In charge | Er. Sudha Goyal   |  |
| Deputy Dean       | Er. Meenu Khurana |  |
| Date              |                   |  |