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| **Semester: VI** | | | | | | |
| **Web Frameworks**  **Category: Professional Core Elective-III (Group-D) (Theory)**  (Common to CS & IS) | | | | | | |
| **Course Code** | **:** | **CS365TDC** |  | **CIE** | **:** | **100** |
| **Credits: L:T:P** | **:** | **3:0:0** |  | **SEE** | **:** | **100** |
| **Total Hours** | **:** | **45L** |  | **SEE Duration** | **:** | **3 Hours** |

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| **Unit-I (Chap 4)** | **09 Hrs** |
| **The Basics of JavaScript:** Overview of JavaScript; Object orientation and JavaScript; General syntactic characteristics; Primitives, operations, and expressions; Screen output and keyboard input; Control statements. **JavaScript (continued):** Object creation and modification; Arrays; Functions; Constructor; Pattern matching using regular expressions; Errors in scripts | |
| **Unit – II (Chap 5,6)** | **09 Hrs** |
| **JavaScript and HTML Documents:** The JavaScript execution environment; The Document Object Model; Element access in JavaScript; Events and event handling; Handling events from the Body elements, Button elements, Text box and Password elements; The DOM 2 event model; The navigator object.  **Dynamic Documents with JavaScript:** Introduction to dynamic documents; Positioning elements; Moving elements; Element visibility; Changing colors and fonts; Dynamic content; Stacking elements; Locating the mouse cursor; Reacting to a mouse click; Slow movement of elements; Dragging and dropping elements. | |
| **Unit –III(Chap 9,7)** | **09 Hrs** |
| **Introduction to PHP**: Origins and uses of PHP; overview of PHP; General syntactic characteristics; Primitives, Operations and Expressions; Output; Control statements; Arrays; Functions; Pattern Matching; Form Handling; Cookies; Session Tracking.  **XML**: Introduction; Syntax; Document structure; Document Type definitions; Namespaces; XML schemas; Displaying raw XML documents; Displaying XML documents with CSS; XSLT style sheets. | |
| **Unit –IV** | **09 Hrs** |
| **Web Development Framework: AngularJS**  Angular JS: Introduction, Angular JS Expressions, Modules, Data Binding, Controllers, DOM, Events, Forms, Validations.  **Introduction to Node JS**  Node JS and its advantages, Traditional Web Server Model, Node JS Process Model, Installation of Node JS, Node JS Basics, Modules Event Loop.  **Introduction to React JS**  Advantages of React JS, Understanding Components and Props, Handling Events, Working with Forms. | |
| **Unit –V** | **09 Hrs** |
| **Ajax:** Overview of Ajax; History of Ajax; Ajax Technology; Implementing Ajax, Basics of Ajax: The Application; The Form Document; The Request Phase; The Response Document; The Receiver Phase; Cross- Browser Support.  **Introduction to Django**  What is Django, Django and Python, Django Model View Template , Installation of Django, Form Classes, Validation. | |

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| **Course Outcomes: After completing the course, the students will be able to: -** | |
| **CO 1** | Understand the basic syntax and semantics of web technology tools such as JavaScript, PHP and XML. |
| **CO 2** | Appy web technology tools for designing static and dynamic web pages. |
| **CO 3** | Investigate & web based design solution to a given problem using different modern web tools and appropriate techniques. |
| **CO 4** | Implement Client and Server side web based real-time applications using JavaScript, PHP , AJAX, Angular JS ,Node JS, React JS and Django. |
| **CO 5** | Demonstrate good coding practices for web applications engaging in lifelong learning. |

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| **Reference Books** | |
| 1. | Programming the World Wide Web – Robert W. Sebesta, 7th Edition, Pearson Education, 2013, ISBN- 13:978-0132665810. |
| 2. | Web Programming Building Internet Applications – Chris Bates, 3rd Edition, Wiley India, 2006, ISBN: 978-81-265-1290-4. |
| 3. | Internet & World Wide Web How to H program – M. Deitel, P.J. Deitel, A. B. Goldberg, 3rd Edition, Pearson Education / PHI, 2004, ISBN-10: 0-130-89550-4 |
| 4. | The Complete Reference to HTML and XHTML- Thomas A Powell, 4th Edition, Tata McGraw Hill, 2003, ISBN: 978-0-07-222942-4. |
| 5. | Chris Northwood, ‘The Full Stack Developer’: Your Essential Guide to Everyday Skills, Apress, 2018, ISBN:484241525, 9781484241523 |

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| **RUBRIC FOR THE CONTINUOUS INTERNAL EVALUATION (THEORY)** | | |
| **#** | **COMPONENTS** | **MARKS** |
| 1. | **QUIZZES:** Quizzes will be conducted in online/offline mode. **TWO QUIZZES** will be conducted & Each Quiz will be evaluated for 10 Marks adding up to 20 Marks. **THE SUM OF TWO QUIZZES WILL BE CONSIDERED AS FINAL QUIZ MARKS.** | **20** |
| 2. | **TESTS:** Students will be evaluated in test consisting of descriptive questions with different complexity levels (Revised Bloom’s Taxonomy Levels: Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating). **TWO TESTS** will be conducted. Each test will be evaluated for 50 Marks, adding up to 100 Marks. **FINAL TEST MARKS WILL BE REDUCED TO 40 MARKS.** | **40** |
| 3. | **EXPERIENTIAL LEARNING:** Students will be evaluated for their creativity and practical implementation of the problem. **Phase I (20) & Phase II (20) ADDING UPTO 40 MARKS**. | **40** |
| **MAXIMUM MARKS FOR THE CIE THEORY** | | **100** |

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| **RUBRIC FOR SEMESTER END EXAMINATION (THEORY)** | | |
| **Q. NO.** | **CONTENTS** | **MARKS** |
| **PART A** | | |
| 1 | Objective type questions covering entire syllabus | 20 |
| **PART B**  (Maximum of TWO Sub-divisions only) | | |
| 2 | Unit 1 : (Compulsory) | 16 |
| 3 & 4 | Unit 2 : Question 3 or 4 | 16 |
| 5 & 6 | Unit 3 : Question 5 or 6 | 16 |
| 7 & 8 | Unit 4 : Question 7 or 8 | 16 |
| 9 & 10 | Unit 5: Question 9 or 10 | 16 |
| **TOTAL** | | **100** |