

**SCHOOL OF INFORMATION TECHNOLOGY**

**DEPARTMENT OF INFORMATION TECHNOLOGY.**

**LAB COURSE HAND-OUT**

**Web Technologies Lab: DS3132 || 1 Credits||0 0 2 1**

**Session: JULY 2022 – DEC 2022 | Faculty Name: Dr. N N Das, Dr Anju Yadav**

Class: B.Tech. IIIYear V Semester

**Introduction:** The main objective of this course is to familiarize students with the basics of Web, Web clients and servers with working of HTTP. It also gives the insight of developing static and dynamic Web pages to serve as front-end to client/server applications, and effective server side programming while introducing event -driven system programming. The course also covers basics of XML and recent trends in the area of web technology. The course also covers application areas of Introduction of web technology in Electronic Commerce**.**

1. **Course Outcomes: At the end of the course, students will be able to**

**[DS3132.1]:**Recognize fundamentals and working principles of web technology and web programming.

**[DS3132.2]:**Design and implement client-side web programming using HTML, Java Script and CSS.

[**DS3132.3]:**Design andImplement server-side programming with Database interactions.

**[DS3132.4]:**Web based applications development and deployment on web server and debugging.

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1. **Program Outcomes and Program Specific Outcomes**

**PROGRAM OUTCOMES**

**[PO.1]. Engineering knowledge**: Demonstrate and apply knowledge of Mathematics, Science and Engineering to classical and recent problems of electronic design & communication system.

**[PO.2]. Problem analysis**: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences

**[PO.3]. Design/development of solutions**: Design a component system, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

**[PO.4]. Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions

**[PO.5]. Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations

**[PO.6]. The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice

**[PO.7]. Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development

**[PO.8]. Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practices

**[PO.9]. Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings

**[PO.10]. Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions

**[PO.11]. Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environment.

**[PO.12]. Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change

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# PROGRAM SPECIFIC OUTCOMES

**[PSO.1].** To apply creativity in support of the design, simulation, implementation and inference of existing and advanced technologies.

**[PSO.2].** To participate & succeed in IT oriented jobs/competitive examinations that offer inspiring & gratifying careers.

**[PSO.3].** To recognize the importance of professional developments by pursuing postgraduate studies and positions.

# Assessment Plan:

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| --- | --- | --- |
| **Criteria** | **Description** | **Maximum Marks** |
| Internal Assessment (Summative) | Continuous evaluation  (10 for Performance, 10 Lab file, 20 Viva, 20 Project) | 60 |
| End Term Exam (Summative) | End Term Practical Exam (Performance and Viva) | 40 |
|  | Total | 100 |
| Attendance (Formative) | A minimum of 75% Attendance is required to be maintained by a student to be  qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves. | |

1. **Syllabus:**

Introduction to HTML, CSS AND Javascript. Web applications using any technology stack or frameworks. MVC Architecture, Web forms and web controls, State management, validation, themes and master page. Working with databases, XML, AJAX. Content Management Systems. Developing mini project using web concepts.

1. **Text / Reference Books:**
2. Web Technologies (Black Book) Learning Solutions Inc., Dreamtech Press, 2009.
3. Jackson, Web Technologies: A Computer Science Perspective, (1e), Pearson Education India, 2007.
4. Srinivasan, Web Technology: Theory and Practice, (1e), Pearson Education India, 2012.
5. Godbole A., Khate A., Web Technologies, (3e), McGraw Hill Education, 2017.
6. Gopalan N. P., Akilandeswari J., Web Technology: A Developer's Perspective, (2e Revised), Prentice Hall India Learning, 2014.
7. Roy U.K., “Web Technologies”, Oxford Press, 2010.

1. **Lecture Plan:**

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| --- | --- | --- | --- | --- | --- |
| Lecture  No | **Topics** | **Session Outcome** | **Mode of Delivery** | **Corresponding CO** | **Mode of Assessing the Outcome** |
| 1 | Create a web page  ,using general format of <html> using body, paragraph, bold, italic, underline, break, horizontal line with back ground color, background image, using all the physical formatting elements. i.e bold italic superscript subscript etc ,using Marquee Elements and font elements | Understand the different properties used in HTML for creation of web page | Practical | **DS3132.1** | Continuous evaluation End Term Examination |
| 2 | Create a web page  (i) using all the logical formatting elements. i.e citece , emphasis, preformatted-text element etc.  (ii) use it for ordered and unordered listing  (iii) menu creation and directory creation | Understand the logical formatting used in HTML for creation of web page | Practical | **DS3132.2** | Continuous evaluation End Term Examination |
| 3 | Create a web page and  (i) use it for the linking of two pages and link between the two places of same page. .  (ii) use of image insertion, insert two images and make link with main page.  (iii) page to create Tables use colspan rowspan, cellspacing, cellpadding and all it attributes. | Understand the use of linking of two pages, insertion of images and creation of table. | Practical | **DS3132.2** | Continuous evaluation End Term Examination |
| 4 | Write an HTML page with Javascript that takes a number from one text field in the range 0-999 and display it in other text field in words. If the number is out of range ,it should show “out of range” and if it is not a number ,it should show “not a number” message in the result box. | Understand the logical use of programming using HTML and Javascript | Practical | **DS3132.1** | Continuous evaluation End Term Examination |
| 5 | Write an HTML page that has one input, which can take multi-line text and a submit button.Once the user clicks the submit button ,it should show the number of characters ,lines and words in the text entered using an alert message.Words are seperated with white space and lines are separated with new line character. | Understand creation of input box with button. | Practical | **DS3132.1** | Continuous evaluation End Term Examination |
| 6 | Write a JavaScript to design a simple calculator to perform the following operations: sum, product, difference and quotient. | Demonstrate the use of different operators. | Practical | **DS3132.4** | Continuous evaluation End Term Examination |
| 7 | Create a webpage which displays "Hello World" with font size 20 pixels, bold format, in "Times New Roman" font and green in colour using inline CSS, embedded CSS and external CSS. | Demonstrate the use of font properties | Practical | **DS3132.2** | Continuous evaluation End Term Examination |
| 8 | [Create a Navigation bar (with dropdown) with CSS](https://www.w3resource.com/html-css-exercise/navigation.php) | Demonstrate the use of navigation bar | Practical | **DS3132.2** | Continuous evaluation End Term Examination |
| 9 | Write a CSS program and implement the following . a.[How to specify no border?](https://www.w3resource.com/html-css-exercise/css-properties/border-style-none-answer.php)  b.[How to specify a dotted border?](https://www.w3resource.com/html-css-exercise/css-properties/border-style-dotted-answer.php)  c.[How to specify the dashed border?](https://www.w3resource.com/html-css-exercise/css-properties/border-style-dashed-answer.php)  d.[How to specify a solid border?](https://www.w3resource.com/html-css-exercise/css-properties/border-style-solid-answer.php)  e.[How to specify the double border?](https://www.w3resource.com/html-css-exercise/css-properties/border-style-double-answer.php)  f.[How to specify a 3D groove border?](https://www.w3resource.com/html-css-exercise/css-properties/border-style-groove-answer.php)  g.[How to specify a 3D ridge border?](https://www.w3resource.com/html-css-exercise/css-properties/border-style-ridge-answer.php)  h.[How to specify a 3D inset border?](https://www.w3resource.com/html-css-exercise/css-properties/border-style-inset-answer.php)  i.[How to specify a 3D outset border?](https://www.w3resource.com/html-css-exercise/css-properties/border-style-outset-answer.php)  j.[How to specify the hidden border?](https://www.w3resource.com/html-css-exercise/css-properties/border-style-hidden-answer.php)  k.[How to specify border to its default value?](https://www.w3resource.com/html-css-exercise/css-properties/border-style-initial-answer.php)  l.[How to specify a dotted solid border?](https://www.w3resource.com/html-css-exercise/css-properties/border-style-dotted-solid-answer.php)  m.[How to specify a dotted solid double dashed border?](https://www.w3resource.com/html-css-exercise/css-properties/border-style-dotted-solid-double-dashed-answer.php) | Demonstrate the use of different properties of border | Practical | **DS3132.4** | Continuous evaluation End Term Examination |
| 10 | How to set the text-color for different elements?  a.[How to specify the text color?](https://www.w3resource.com/html-css-exercise/css-properties/color-color-answer.php)  b.[How to set color initial property to its default value?](https://www.w3resource.com/html-css-exercise/css-properties/color-initial-answer.php)  c.[How to color property is animatable?](https://www.w3resource.com/html-css-exercise/css-properties/color-animatable-answer.php) | Demonstrate the use of different properties of text colors | Practical | **DS3132.2** | Continuous evaluation End Term Examination |
| 11 | Write a CSS program to display all different type of cursor? | Demonstrate the use of different types of cursor | Practical | **DS3132.4** | Continuous evaluation End Term Examination |
| 12 | Write a program to use server side program with database connectivity using XML and AJAX | Demonstrate the use of server side program with database connectivity | Practical | **DS3132.3** | Continuous evaluation End Term Examination |

1. **Course Articulation Matrix: (Mapping of COs with POs)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **STATEMENT** | CORRELATION WITH PROGRAM OUTCOMES | | | | | | | | | | | | | CORRELATION WITH PROGRAM SPECIFIC OUTCOMES | | |
| PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PSO 1 | | PSO 2 | PSO 3 |
| [DS3132.1] | Recognize fundamentals and working principles of web technology and web programming. | 2 |  |  |  | 3 |  | 2 | 2 |  |  | 3 |  | 3 | | 2 |  |
| [DS3132.2] | Design and implement client-side web programming using HTML, Java Script and CSS. |  |  | 3 | 3 | 1 |  |  |  |  |  |  | 3 |  | | 2 | 2 |
| [DS3132.3] | Design and Implement server-side programming with Database interactions. |  | 2 | 3 | 2 | 1 | 1 |  |  | 2 | 2 |  |  |  | |  | 3 |
| [DS3132.4] | Web based applications development and deployment on web server and debugging. |  |  |  |  | 3 |  |  | 1 | 1 |  |  |  | 3 | |  | 2 |

1. **Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation**