Web Technology I
EG2102CT

Year: II

Part: I

Total: 7 hours/week
Lecture: 3 hours/week
Tutorial: 1 hour/week
Practical: hours/week
Lab: 3 hours/week

Course description:
This course is designed to provide skills to the student to develop modern web application and gain a broad understanding of the Web Technology. This course focuses on the development of dynamic web contents and applications to facilitate information distribution. The course will initiate students to the different web development tools and technology such as HTML, HTML 5, CSS, JavaScript and GUI based tools.

Course objectives:
After completion of this course students will be able to:
1. Familiarize with the basic technique of web technology and web page design
2. Use recent web development software to develop dynamic web contents and applications
3. Design the client-side web site with features of control of client side.

Course Contents:

Theory

Unit 1. Internet & Web   **[5 Hrs.]**
1.1. History of Internet and Web
1.2. Uses of Internet and Services
1.3. Introduction to WWW
1.4. Component of WWW (Web, Webpage, Website, Homepage, Web Browsers, Web Servers, URL and Search Engines)
1.5. Types of Web Pages & its Processing in WWW
1.6. Internet protocols (TCP/IP, ARP, HTTP, FTP, SMTP, POP, SNMP) and applications

Unit 2. Hypertext Markup Language (HTML)   **[15 Hrs.]**
2.1. Introduction to HTML
2.2. Basic Structure of HTML (HTML, HEAD, TITLE, BODY)
2.3. BODY Attributes (Forecolor: TEXT and Background color: BGCOLOR, Background Image, Background Sound)
2.4. HTML Elements
2.5. HTML TAGS and Attributes
    2.5.1. Singular Tags
    2.5.2. Paired Tags
2.6. Character formatting
    2.6.1. Heading Tag (H1 to H6) and attribute (ALIGN)
    2.6.2. Paragraph Tag and attribute (ALIGN)
    2.6.3. Line Break (BR)
    2.6.4. Horizontal Rule (HR) and attribute (ALIGN, SIZE, WIDTH, NOSHADE)
    2.6.5. Comment in HTML (<!>)
    2.6.6. Text Formatting (B, I, U, BLOCKQUOTE, Q, PREFORMATTED, SUB, SUP, EM, STRIKE, SMALL, BIG, CENTER)
2.7. FONT tag and Attributes (COLOR, FACE and SIZE)

2.8. List Tags and Attributes
    2.8.1. Ordered List: OL, LI, and OL Attributes (TYPE - 1, I, i, A, a, START, VALUE)
    2.8.2. Unordered List: UL, LI, and UL Attributes (TYPE- Disc, Circle, Square)
    2.8.3. Definition List: DL, DT, DD
2.9. Inserting IMAGES and OBJECTS
    2.9.1. Images: IMG; Attributes (ALIGN, SRC, WIDTH, HEIGHT, ALT, BORDER)
    2.9.2. Objects: OBJECT; Attributes (DATA, WIDTH, HEIGHT)
2.10. MARQUEE tag and attributes
2.11. HYPERLINK and Anchor Tag
    2.11.1. Creating Internal Links: Links to other places in the same HTML documents
    2.11.2. Creating Local Links: Link to other HTML documents or data objects
    2.11.3. Creating Global Links: Links to places in other HTML documents
    2.11.4. Anchor Tag and Hyperlink<A HREF TARGET>and<A NAME>
    2.11.5. Creating Image Links
2.12. TABLE Tag
    2.12.1. Creating TABLE, TR, TH and TD and attributes (ALIGN, CELLSPACING, CELLPADDING, BORDER, WIDTH, BGCOLOR, COLSPAN, ROWSPAN, CAPTION, CENTER)
2.13. FRAME and FRAMESET Tags
    2.13.1. FRAMESET tag and Attributes (ROWS, COLS and Absolute dimensions, Percentage dimensions, Relative dimensions)
    2.13.2. FRAME tag and Attributes (SRC, NAME, MARGIN HEIGHT, MARGIN WIDTH, SCROLLINGAUTONORESIZE)
    2.13.3. NOFRAMES tag
2.14. HTML FORM
    2.14.1. FORM tag and attributes (METHOD, ACTION, TARGET)
    2.14.2. INPUT element and attributes (TYPE – TEXT, PASSWORD, CHECKBOX, HIDDEN, IMAGE, FILE, RANGE, RADIO, RESET, SUBMIT, BUTTON; VALUE, SRC, CHECKED, SIZE, MAXLENGTH, ALIGN)
    2.14.3. SELECT, OPTION Tag and attributes (NAME, SIZE, MULTIPLE / SINGLE, SELECTED)
    2.14.4. TEXT AREA Tag and attributes (ROWS, COLS, READ ONLY, DISABLED)

Unit 3. HTML 5 and Features [5 Hrs.]
3.1. Introduction
3.2. Difference between HTML and HTML 5
3.3. HTML 5 New Semantics Elements (HEADER, FOOTER, SECTION)
3.4. HTML 5 New Elements
    3.4.1. Tables, Images, Colors, Canvas, Forms
    3.4.2. Interactive Elements
    3.4.3. Graphics
    3.4.4. Multimedia

Unit 4. HTML Editors and Tools [5 Hrs.]

4.1. Introduction to HTML Editors and HTML Converters
4.2. HTML Editors and tools
    4.2.1. Use of different HTML editors and tools like Dreamweaver, Microsoft Front Page Notepad++, etc.
4.3. Graphical and Animation Tools
    4.3.1. Use of different graphical and animation tools like Adobe Photoshop, MS Paint, Flash, etc.
    4.3.2. Adding Sounds and Animation to the web page (using embed tag)

Unit 5. Cascading Style Sheet (CSS) [5 Hrs.]

5.1. Introduction to Cascading Style Sheets (CSS) and advantages of using CSS
5.2. Basic Syntax
    5.2.1. Creating Cascading Style Sheets (CSS) using STYLE tag
5.3. Types of Style Sheets
    5.3.1. Inline Style Sheets
    5.3.2. Internal/ Embedded Style Sheets
    5.3.3. External Style Sheets
5.4. Introduction to different Styles and their Attributes
    5.4.1. Backgrounds and Color Styles and Attributes
    5.4.2. Fonts and Text Styles and Attributes
    5.4.3. Margin, Padding and Border Styles and Attributes
    5.4.4. List Styles and Table Layouts
    5.4.5. Additional Features - Grouping Style Sheets, Assigning Classes and Span
    5.4.6. DIV Tag
    5.4.7. Responsive Web Design

Unit 6. Introduction to Server Side and Client-Side Scripting [2 Hrs.]

6.1. Overview of Server Side and Client-Side Scripting
6.2. Difference between Server Side and Client-Side Scripting
6.3. Advantages and Disadvantages of Server Side and Client-Side Scripting

Unit 7. JavaScript [8 Hrs.]

7.1. Overview of JavaScript
7.2. Advantages of JavaScript
7.3. Implementing JavaScript code to HTML page using SCRIPT tag
7.4. Variables in JavaScript
7.5. JavaScript Data Type-Variant subtypes
7.6. JavaScript Functions
7.7. Event Handling and JavaScript objects
7.8. Document Object Model in JavaScript
    7.8.1. Browser Objects and Events
    7.8.2. Document Objects and Events
    7.8.3. Form Objects and Events
7.9. Dialog Box supported by JavaScript
7.10. Form validation

Practical: [45 Hrs.]

1. Design a simple page using Character formatting i.e. (Heading Tag (H1 to H6), Paragraph Tag, Line Break, Horizontal Rule, Text Formatting (B, I, U, SMALL, BIG,

EM, SUB, SUP, PRE, STRIKE, CENTER and BLOCKQUOTE) and also use FONT tag and Attributes (COLOR, FACE and SIZE) using HTML.
2. Demonstrate the use of different LIST and their attributes using HTML.
3. Demonstrate the use of TABLE (use ALIGN, CELLSPACING, CELLPADDING, BORDER, WIDTH, BGCOLOR, COLSPAN, ROWSPAN, CAPTION, CENTER attributes) using HTML.
4. Demonstrate the use of HYPERLINK (use internal link, local link, global link and image link) in HTML.
5. Create a page containing 3 FRAMES with 1st frame covering 40% of the screen (vertical coverage) and remaining screen should be horizontally divided into 2 frames (40% and 60%). The 1st frame should contain a banner image and 2nd frame contains the links (i.e. link1 and link2) and the links of these items must be opened in the 3rd frame. Use FRAMESET and FRAME tags of HTML to create the pages.
6. Design a FORM containing username, password, radio button, checkbox, drop-down menu, textarea (for comment section), submit button, and reset button using HTML.
7. Demonstrate the use of different types of CSS in HTML.
8. Demonstrate the use of class and div tags in HTML.
9. Demonstrate the use of JavaScript code to the html page.
10. Develop a simple web site with different simple web pages.

Final written exam evaluation scheme			
Unit	Title	Hours	Marks Distribution*
1	Internet & Web	5	10
2	Hypertext Markup Language (HTML)	15	24
3	HTML 5 and Features	5	8
4	HTML Editors and Tools	5	8
5	Cascading Style Sheet (CSS)	5	10
6	Introduction to Server Side and Client-Side Scripting	2	5
7	JavaScript	8	15
Total		**45**	**80**

* There may be minor deviation in marks distribution.

References:

1. Bayross, Ivan (New Edition), HTML, DHTML, JavaScript & PHP, BPB publications
2. Kamal Raj, "Internet & Web Design", Tata McGraw Hill Wiley, Chris Bates, Web programming Dreamtech India Pvt. Ltd
3. Keith Jeremy, "HTML5 for Web Designers"