

# GUJARAT TECHNOLOGICAL UNIVERSITY

## COMPUTER ENGINEERING (SOFTWARE ENGINEERING) (02) / INFORMATION TECHNOLOGY

INTERNET TECHNOLOGY

SUBJECT CODE: 2720214

SEMESTER: II

**Type of course:** Elective

**Prerequisite:** None

**Rationale:** Internet has been widely used and development of web content should be learnt by all engineering students besides Computer and Information Technology professionals. This course aims to teach technologies used by world wide web to students other than computer/Information Technology branch.

### Teaching and Examination Scheme:

| Teaching Scheme |    |   | Credits | Examination Marks |         |                 |        |    |    | Total Marks |
|-----------------|----|---|---------|-------------------|---------|-----------------|--------|----|----|-------------|
| L               | T  | P |         | Theory Marks      |         | Practical Marks |        |    |    |             |
|                 |    |   | ESE (E) | PA (M)            | ESE (V) |                 | PA (I) |    |    |             |
|                 |    |   |         |                   | ESE     | OEP             | PA     | RP |    |             |
| 3               | 2# | 2 | 5       | 70                | 30      | 20              | 10     | 10 | 10 | 150         |

### Content:

| Sr. No. | Topics  | Teaching Hrs. | Module Weightage |
|---------|---|---------------|------------------|
| 1       | Introduction to WWW :<br>History of www. HTTP protocol, request and response messages, methods of HTTP. HTTPS, SMTP, IMAP, POP3 and DNS.<br>Web Design:<br>Web site design principles, planning the site and navigation   | 3             | 5                |
| 2       | Introduction to HTML :<br>The development process, basic HTML, formatting and fonts, commenting code, color, hyperlink, lists, tables, images, simple HTML forms, web site structure Introduction to XHTML: Move to XHTML, Meta tags, Character entities, frames and frame sets, inside browser. Introduction to HTML5: what is HTML5, basic tags like header, footer, <nav>, article, section, and HTML 5 Web forms 2.0    | 8             | 20               |
| 3       | Style sheets :<br>Need for CSS, introduction to CSS, basic syntax and structure, using CSS, background images, colors and properties, manipulating texts, using fonts, and borders, CSS Box Model, margins, padding lists, positioning using CSS, CSS2  | 6             | 20               |
| 4       | Javascript :<br>Introduction to Client side scripting, need for javascript, How to develop Javascript, simple Javascript, variables, functions, conditions, loops and repetition. Javascript arrays, javascript objects and user defined objects, HTML DOM, Browser Object Model, event handling in javascript. Form validation using javascript regular expression. DHTML: Creating Dynamic HTML using javascript and CSS. | 10            | 20               |

|   |  |   |    |
|---|--|---|----|
| 5 | Core Components:<br>Hardware platforms, Internet server components, Webservers, E-mail servers, FTP servers, Proxy servers, News servers, Directory servers, Mirrored servers  | 2 | 5  |
| 6 | Networking Hardware and Software Components:<br>Network Interface Cards, Network Cables, Network Connecting Devices etc.   | 2 | 10 |
| 7 | Blog: Discovering blog basics, Entering blog sphere, choosing and hosting blog sphere, Setting up your blog, Creating great content  | 5 | 10 |
| 8 | Web 2.0:<br>Introduction to RSS, RSS in the Communication Revolution, Choosing an RSS Feed Reader, Subscribing to RSS Feeds, Creating Your First Feed. Creating RSS Feeds from Scratch. Automating RSS Creation. Podcasting: Adding Multimedia to RSS Feeds. | 6 | 10 |

### Reference Books:

1. P.J.Deitel, H.M.Deitel, Internet and World Wide Web: How to program, Pearson a. publication.
2. Blogging For Dummies, Susannah Gardner, Shane Birley, John Wiley & Sons
3. Syndicating Web Sites with RSS Feeds For Dummies, Ellen Finkelstein
4. Web technologies Black Book, Dreamtech.
5. Professional Web 2.0 Programming by Eric van der Vlist, Danny Ayers, Erik a. Bruchez (Wrox Publication)
6. U. K. Roy, Web Technologies, Oxford Higher Education
7. Computer Networks and Internets With Internet Applications By Douglas E
8. Comer, Pearson
9. Computer Network with Internet Protocols By William Stallings, Pearson
10. Data Communication And Networking By B. Forouzan TMH Publication
11. Ralph Moseley, Developing Web Application, Wiley India
  - a. Reference Books:
12. Dynamic HTML: The Definitive Reference (2nd Edition) – Danny Goodman;
13. O’reilly (paperback)
  - a. HTML 4 Bible - Bryan Pfaffenberger, Bill Karrow; Paperback
14. HTML 4.01 Programmer’s Reference – Chris Ullman, Sean Plamer, Simon
  - a. Oliver...., Paperback

### Course Outcome:

After learning the course the students should be able to:

- Explain the fundamentals of WWW.
- Develop dynamic web pages.
- Create a blog.
- Create RSS feed

### List of Experiments:

#### PRACTICAL LIST (HTML/CSS)

- (1) Write a HTML page to print Hello World .
- (2) Create a web page illustrating text formatting tags available in HTML. (i.e. <h1>, <b>, <u>

,<i>)

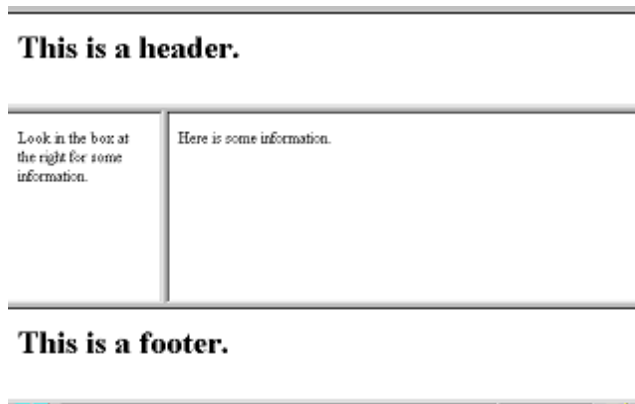
(3) Prepare a sample code to illustrate three types of lists in HTML.

(4) Create a HTML file which displays 3 images at LEFT, RIGHT and CENTER respectively in the browser.

(5). Create the below given table.

| Work Contact Points |                   |        |             |
|---------------------|-------------------|--------|-------------|
| Name                | Email             | Phone  | Floor/Block |
| Fred                | fred@megacorp.com | 123456 | 1/A         |
| Jon                 | jon@megacorp.com  | 234567 |             |
| Bill                | bill@megacorp.com | 345678 | 3/C         |
| Jane                | jane@megacorp.com | 777444 |             |
| Alison              | alison@megacorp   | 888652 |             |

(6) Using Frames Divide the web page as follows



(7) Create a student registration form using the following tags <form>, <input>, <textarea>, <button>, <select>, <option>. The registration form must consist of following information :

First Name, Middle Name, Last Name, Gender (use radio button), Address, Phone No., email id, Hobbies (use checkbox), City, State, Country, College Name (use dropdown menu)

(8) CSS - provide inline, internal and external style sheet for the student registration form.

(9) Write a CSS program to set an image as the background. c. Provide styling as given below:

| Company                   | Contact            | Country |
|---------------------------|--------------------|---------|
| AlfredsFutterkiste        | Maria Anders       | Germany |
| BerglundsSnabbköp         | Christina Berglund | Sweden  |
| Centro comercialMoctezuma | Francisco Chang    | Mexico  |
| Ernst Handel              | Roland Mendel      | Austria |

(10) Write a program to demonstrate the use of GET, POST, developing a Feedback form with the use of <form> and <button> HTML tags.

(11) Write HTML/CSS code to create table with 5 rows and 3 columns. Even no. of rows display in green color and odd no. of rows display in white color.

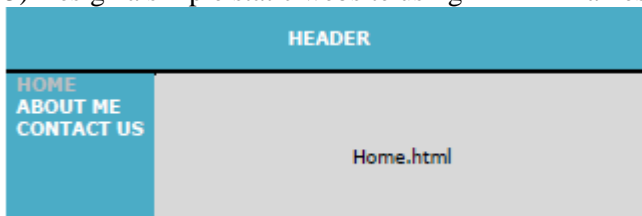
(12) Develop and demonstrate a HTML document that illustrates the use external style sheet, ordered list, table, borders, padding, color, and the <span> tag.

(13) Create a CSS style sheet and use it to display the document. The information must include USN, Name, and Name of the College, Branch, Year of Joining, and e-mail id. Make up sample data for 3 students.

(14) Format your Profile Page Using Different CSS Elements.

(Note: e.g. CSS Background, Text, Font, Tables, Links, Images, Margin )

(15) Design a simple static website using HTML Frameset, Frame Having Following Structure



(16) Write JavaScript to perform the following operations:

- to calculate sum of 1 to n
- to check whether given number is prime or not
- to check whether given number is armstrong or not
- to check whether given number is palindrome or not
- to find roots of quadratic equation
- to calculate factorial of n
- to find highest from given three values
- to print any triangle form for given n
- to find all primes which are lies between a given range.

(17) Create a blog of your favourite subject.

(18) Create RSS feed for different topics related to college.

**Design based Problems (DP)/Open Ended Problem:**

- Develop responsive and adaptive design using HTML/CSS/JavaScript. Designing a web site for visually impaired, for people who cannot hear.
- Analyze popular tools and frameworks used by marketers and designers to create website and blog and design framework.

**Major Equipment:** Computer- laptop with browser

**List of Open Source Software/learning website:**

- <http://www.w3schools.com>.
- <http://tutorialspoint.com>.
- NPTEL Lecture Series

**Review Presentation (RP):** The concerned faculty member shall provide the list of peer reviewed Journals and Tier-I and Tier-II Conferences relating to the subject (or relating to the area of thesis for seminar) to the students in the beginning of the semester. The same list will be uploaded on GTU website during the first two weeks of the start of the semester. Every student or a group of students shall critically study 2 papers, integrate the details and make presentation in the last two weeks of the semester. The GTU marks entry portal will allow entry of marks only after uploading of the best 3 presentations. A unique id number will be generated only after uploading the presentations. Thereafter the entry of marks will be allowed. The best 3 presentations of each college will be uploaded on GTU website