GUJARAT TECHNOLOGICAL UNIVERSITY

COMPUTER ENGINEERING (07) ,INFORMATION TECHNOLOGY (16) and INFORMATION & COMMUNICATION TECHNOLOGY (32)
WEB TECHNOLOGY
SUBJECT CODE: 2160708
B.E. 6thSEMESTER

Type of course: Core course

Prerequisite: Fundamentals of Programming and Networking

Rationale: The wide spread use of the Internet and WWW by common people has made it compulsion to provide web based interface for the applications to access the application from anywhere, anytime, anyone. The subject covers the wide range of web technologies both client side and server side to provide the exposure to the students to develop Rich Internet Applications using them. It covers the basics WWW, client side technologies like HTML, CSS and DHTML including JavaScript, server side scripting with PHP and database connectivity using PHP and related technologies.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks						Total Marks
L	T	P	C	Theory Marks			Practical Marks			
				ESE (E)	PA (M)		ESE (V)		PA (I)	
					PA	ALA	ESE	OEP		
3	0	2	5	70	20	10	20	10	20	150

Content:

Sr. No.	Content	Total Hrs	% Weightage
1	**Introduction** : Concept of WWW, Internet and WWW, HTTP Protocol : Request and Response, Web browser and Web servers, Features of Web 2.0	04	7%
2	**Web Design**: Concepts of effective web design, Web design issues including Browser, Bandwidth and Cache, Display resolution, Look and Feel of the Website, Page Layout and linking, User centric design, Sitemap, Planning and publishing website, Designing effective navigation	04	8%
3	**HTML** : Basics of HTML, formatting and fonts, commenting code, color, hyperlink, lists, tables, images, forms, XHTML, Meta tags, Character entities, frames and frame sets, Browser architecture and Web site structure. Overview and features of HTML5	10	20%
4	**Style sheets** : Need for CSS, introduction to CSS, basic syntax and structure, using CSS, background images, colors and properties, manipulating texts, using fonts, borders and boxes, margins, padding lists, positioning using CSS, CSS2, Overview and features of CSS3	04	10%
5	**JavaScript** : Client side scripting with JavaScript, variables, functions, conditions, loops and repetition, Pop up boxes, Advance JavaScript: Javascript and objects, JavaScript own objects, the DOM and web	10	20%

	browser environments, Manipulation using DOM, forms and validations, DHTML : Combining HTML, CSS and Javascript, Events and buttons		
6	**XML** : Introduction to XML, uses of XML, simple XML, XML key components, DTD and Schemas, Using XML with application. Transforming XML using XSL and XSLT	04	10%
7	**PHP** : Introduction and basic syntax of PHP, decision and looping with examples, PHP and HTML, Arrays, Functions, Browser control and detection, string, Form processing, Files, Advance Features: Cookies and Sessions, Object Oriented Programming with PHP	08	15%
8	**PHP and MySQL** : Basic commands with PHP examples, Connection to server, creating database, selecting a database, listing database, listing table names, creating a table, inserting data, altering tables, queries, deleting database, deleting data and tables, PHP myadmin and database bugs	04	10%

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
12	**20**	**24**	**6**	**4**	**4**

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference Books:

1. Developing Web Applications, Ralph Moseley and M. T. Savaliya, Wiley-India
2. Web Technologies, Black Book, dreamtech Press
3. HTML 5, Black Book, dreamtech Press
4. Web Design, Joel Sklar, Cengage Learning
5. Developing Web Applications in PHP and AJAX, Harwani, McGrawHill
6. Internet and World Wide Web How to program, P.J. Deitel & H.M. Deitel, Pearson

Course Outcome:

After completion of the course students will be able to

1. Describe the concepts of WWW including browser and HTTP protocol.
2. List the various HTML tags and use them to develop the user friendly web pages.
3. Define the CSS with its types and use them to provide the styles to the web pages at various levels.
4. Develop the modern web pages using the HTML and CSS features with different layouts as per need of applications.
5. Use the JavaScript to develop the dynamic web pages.
6. Use server side scripting with PHP to generate the web pages dynamically using the database connectivity.
7. Develop the modern Web applications using the client and server side technologies and the web design fundamentals.

List of Experiments:

Practical list should be prepared based on the content of the subject with following guidelines in mind.

1. Entire syllabus should be covered.
2. Practical list should be designed with real life examples.
3. List should be prepared to cover individual concepts and integration of different concepts on real life problems.

Design based Problems (DP)/Open Ended Problem:

1. Develop an attractive Web site for an event to be organized in your institute.
2. Develop a Web based application to manage the Visiting Cards which allows user to add new cards, delete the cards, update the cards etc.
3. Develop a web based application for online purchasing of products with payment facility

Major Equipment:

- Modern PC with Web server software installed or accessible through LAN

List of Open Source Software/learning website:

- Browsers like IE, Mozila, FireFox etc
- Server software XAMPP/WAMP/LAMP
- www.apachefriends.org
- www.w3.org
- www.w3schools.com
- www.php.net
- www.mysql.com
- www.phpmyadmin.net

ACTIVE LEARNING ASSIGNMENTS: Preparation of power-point slides, which include videos, animations, pictures, graphics for better understanding theory and practical work – The faculty will allocate chapters/ parts of chapters to groups of students so that the entire syllabus to be covered. The power-point slides should be put up on the web-site of the College/ Institute, along with the names of the students of the group, the name of the faculty, Department and College on the first slide. The best three works should submit to GTU.