IT 237: Web Technology I

BIM 3rd Semester

Credits: 3
Lecture Hours: 48

Course Objectives

The main objective of this course is to provide students both theoretical and practical knowledge of different technologies that are used to develop front-end portion of web sites.

Course Description

This course covers different concepts of Web Technologies including web essentials, HTML, CSS, JavaScript, and some basic concepts of jQuery, AJAX, JSON and XML.

Course Details

Unit 1: Web Essentials **5 LHs**

The Internet; Basic Internet Protocols: TCP/IP, UDP, DNS and Domain Names, Higher-Level Protocols; HTTP; HTTP Request and Response Messages; WWW; URL; Client/Server Architecture: 1-Tier, 2-Tier, and 3-Tier; Web Page and Web Site; Static and Dynamic Web Sites; Web 1.0, Web 2.0 and Web 3.0

Unit 2: Markup Language **13 LHs**

Introduction to HTML; Structure of HTML Document; Elements and Attributes; Writing Comments; Headings; Paragraphs and Line Breaks; Horizontal Rules; Text Formatting; Hyperlinks; Images; Tables; Lists; Iframes; Head and Meta; Form and Form Elements; Working with Audio and Video; HTML5 Sectioning Elements: <article>, <aside>, <section>, <nav>, <header>, and <footer>; The tag; Class and id Attributes; HTML Events

Unit 3: Style Sheet Language **10 LHs**

Cascading Style Sheets (CSS); CSS Syntax; Inserting CSS: Inline, Internal, External; Writing Comments; Name, ID and Class Selectors; Combinators Selectors, Pseudo-class Selectors, Pseudo-element Selectors, and Attribute Selectors; Colors; Backgrounds; Borders; Margins; Paddings; Height/Width; Box Model; Text; Font; Links; List; Tables; Display; Max-width; Position; Overflow; Float; Align; Forms; Responsive Web Design; Media Queries; Responsive Web Design Frameworks

Unit 4: Client-Side Scripting **15 LHs**

Introduction; Adding JavaScript to a Page; Output; Comments; Variables and Data Types; Operators; Control Statements; Functions; Arrays; Classes and Objects; Built-in Objects; Event Handling and Form Validation, Error Handling, Handling Cookies; DOM; BOM; Basics of jQuery, React, and AngularJS, AJAX, and JSON.

Unit 5: eXtensible Markup Language **5 LHs**

Introduction; Syntax; Elements and Attributes; Namespace; DTD and Schema; Introduction to XPath, XSLT, and XQuery.

Laboratory Works:
The laboratory work includes creating web pages using HTML, CSS, JavaScript and other related client-side technologies.

Suggested Readings

- ***Web Technologies: A Computer Science Perspective*,** Jeffrey C. Jackson, Pearson Prentice Hall.
- ***HTML & CSS: Design and Build Websites***, Jon Duckett, John Wiley & Sons, Inc.
- ***JavaScript and jQuery: Interactive Front-End Web Development***, Jon Duckett, John Wiley & Sons, Inc.
- ***Learning Web Design: A* Beginner's Guide to HTML, CSS, JavaScript, and Web *Graphics*,** Jennifer Niederst Robbins, O'Reilly Media, Inc.
- ***Sams Teach Yourself HTML, CSS, and JavaScript All in One***, Jennifer Kyrnin and Julie Meloni Pearson Education, Inc.
- ***An Introduction to XML and Web Technologies***, Anders Møller and Michael I. Schwartzbach, Addison-Wesley.
- www.w3schools.com