COURSE 4: E-COMMERCE AND WEB APPLICATION DEVELOPMENT

Theory   **Credits: 3**   **3 hrs/week**

Course Objectives:
1. Understand the evolution, types, and models of e-commerce, including technical, legal, and ethical frameworks. Explore web design technologies and content management systems relevant to e-commerce platforms.
2. Apply online marketing principles, SEO techniques, and e-payment systems with attention to logistics and risk management.
3. Design interactive and responsive websites using HTML5, CSS3, and client-side scripting with JavaScript.
4. Develop and customize CMS-based interfaces using the Bootstrap framework and responsive design principles.

Course Outcomes:
Learners will be able to:
1. Describe e-commerce models, revenue strategies, and legal considerations including cyber laws and data privacy.
2. Implement basic web structures using HTML5 and apply web design principles suitable for digital commerce.
3. Create and style dynamic websites using CSS for layout, animation, and visual enhancements.
4. Write client-side scripts using JavaScript to enable interactivity, form validation, and event handling.
5. Build responsive e-commerce front-ends using the Bootstrap framework, incorporating reusable UI components and custom styling.

UNIT-I

Introduction to E-Commerce: Definition, scope, and evolution, Benefits and limitations
Types of E-Commerce: B2B, B2C, C2C, C2B, G2C models
E-Commerce Business Models: Revenue models (advertising, subscription, etc.)
Infrastructure for E-Commerce : Internet, intranet, Extranet
Payment gateways and digital wallets Legal and Ethical Issues: Cyber laws and data privacy,Intellectual property, taxation, and security.
Case study : Study of successful e-businesses

UNIT-II
Technology in E-Commerce: Essentials of web design for business - Content management systems (WordPress, Shopify, BootStrap)
Online Marketing & SEO: Digital marketing channels, Search engine optimization basics.
Digital Payment Systems: Credit/Debit Cards, Net Banking, Mobile Wallets, UPI, Electronic Fund Transfer (EFT) , Payment Gateways – Blockchain and Cryptocurrencies, Artificial Intelligence and E-Commerce, Future of E-Commerce.
Web Designing: Web designing Principles, Introduction to HTML5, HTML Document Structure, Formatting Elements (text and block formatting), Lists, Images, Links and Navigation (External and internal links), Tables, Inlineframes, HTML Forms. Embedding multimedia objects.

UNIT III : Cascading Style Sheets
CSS Basics: CSS Rule, Applying CSS Rules (Selectors), Embedding CSS code in HTML page Inline,internal,external style sheets.
CSS Properties: Font, Color, Types of CSS Color values, Background, CSS Box Model, Display properties, Styling Pseudo Elements, Positioning properties, Layering, Styling Lists and tables.

UNIT IV: Client Side Scripting using JAVA SCRIPT
Javascript Basics: Datatypes, Variables, Operators, Control Statements, Functions.
Builtin Objects: Arrays, String, Date, Window, Document, RegEx.

Document Object Modelling: Introduction to DOM, Form Validation using Java Script, Event Handling: Mouse events, form submission events, load and unload events, keyboard events – focus and blur events.

UNIT V : BOOTSTRAP FRAMEWORK for designing CMS
Responsive Webdesign: Grid System, Breakpoints, Containers, Utilities.
Introduction to BOOT STRAP FRAME WORK: Benefits, Setup Bootstrap Project.
BootStrap Components: Navigation, Creating navigation bars (.navbar), Dropdowns, and Responsive togglers. Buttons-Styling buttons with various classes for size, color, and state. Forms-Styling form elements like inputs, labels, and client side validation. Carousels-Creating image sliders. Alerts: Displaying informative messages
Customization: Overriding Bootstrap's default styles using custom CSS

TEXT BOOKS & REFERENCE BOOKS
1. Whiteley, D., 2000. *E-commerce: Strategy, technologies and applications*. McGraw-Hill Education.
2. Turban, Efraim, David King, Jae Kyu Lee, Ting-Peng Liang, and Deborrah Turban. *Electronic Commerce: Concepts, Models, Strategies*. Pearson Education, 2002.
3. Robbins, Jennifer Niederst. *Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics*. 5th ed., O'Reilly Media, 2018.
4. Kogent Learning Solutions Inc. *Web Technologies Black Book*. Dreamtech Press, 2009.
5. Diwan, Amit. *Ultimate Bootstrap for Responsive Web Design*. Orange Education Pvt. Ltd., 2024. ISBN: 9789348107251.
6. Hussain, Frahaan, and Kameron Hussain. *Mastering Bootstrap 5: From Basics to Expert Projects*. Sonar Publishing, 2023. ISBN: B0CPW9PRVT.

COURSE 4: E-COMMERCE AND WEB APPLICATION DEVELOPMENT

Practical   **Credits: 1**   **2 hrs/week**

List of Experiments:
1.   Create a simple HTML page with:Headings, paragraphs, bold/italic text
2.   Create a music promotion webpage (include audio and video files in your html page)
3.   Create an online registration form
4.   Create Grocery Lists for an E-commerce Website (OL: Top 5 fruits in demand, UL: 5 vegetables, DL: Terms – Fruits, Vegetables, Beverages (with definitions))
5.   Create a Blog Article with Text Formatting (sample tasks: Bold the title; Italicize author name; Highlight key points, Use subscript/superscript for scientific terms. highligth the important lines etc)
6.   Create a static product gallery page that displays 4 product images in a grid layout (using HTML tables)
7.   Create an interactive map using <map> and <area> tags where clicking on different areas navigates to different pages.
8.   Demonstrate the usage of hyper links : intra hyperlinks, external and internal hyperlinks
9.   Create a table with columns: Bus No, Route, Departure Time, Arrival Time for 5 buses.
10. Demonstrate the usage of iframes.
11. Demonstrate Layout Design Using CSS Box Model.
12. Demonstrate linking an external CSS file to style a multi-page college website.
13. Demonstrate Styling Text, Colors, and Backgrounds.
14. Demonstrate CSS animation on page elements(text,images etc)
15. Create a webpage to Design an image gallery page for an art exhibition.(Apply transitions and transforms for interactive effects like scale transform when an image is hovered- Rotate an image slightly when clicked- Smooth transitions for hover effects)
16. Create webpages demonstrating the usage of CSS Animations and transitions and transforms on images and text
17. Write a script to take two numbers as input and display their sum, difference, and product using a function.
18. Validate a registration form (check for empty fields, valid email, and password length).
19. Create a webpage that changes background color when a button is clicked and displays an alert when the page is loaded.
20. Create a web page with a list and buttons to Add, Remove, and Highlight list items dynamically using JavaScript DOM methods.
21. Display a live digital clock on a web page using JavaScript (updates every second).
22. Write a JavaScript program that greets the user with "Good Morning", "Good Afternoon", or "Good Evening" based on the current system time.
23. Create a product showcase slideshow for an e-commerce homepage using JAVA SCRIPT   (Use onclick events for "Next" and "Previous" buttons to navigate).
24. Create a small price calculator for an e-commerce page to calculate the final price of a product after applying a discount/offers.
25. Create a navigation menu with hover effects for a website using CSS The top of the page should have a navigation bar with links:
     · Home
     · Products
     · Deals
     · About
     · Contact
On hovering over these links, the color and background should change smoothly.

25. Create a featured products carousel for an online store homepage using Bootstrap.
26.   Develop a responsive web-based virtual calculator interface using Bootstrap (Hint: Use Bootstrap Grid System and Components to create a calculator interface. Apply Bootstrap utilities for alignment, spacing, and button styling. Add basic functionality using JavaScript)

27.　Mini Project: Build a single-page responsive portfolio combining HTML5, CSS, JavaScript, and Bootstrap:

- Sections: Home, About, Projects, Contact
- Responsive layout
- Bootstrap components (navbar, carousel, buttons)

Note : The list of experiments is not limited to those mentioned above. A comprehensive set of programming or software tool-based exercises may be developed by the respective faculty members.