



## COURSE CONTENT

Web Application Development Lab								
I Semester: CE / CSD / CSE / CSM / ECE / EEE / ME								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P		C	CIA	SEE
2410596	Foundation	0	0	2	1	40	60	100
		Contact Classes: Nil			Tutorial Classes: Nil		Practical Classes: 30	
Total Classes: 30								
Prerequisites: There are no prerequisites to take this course.								

### Course Overview:

This **course overview** covers the fundamentals of **HTML, CSS, and JavaScript** through practical web-page development programs. In HTML, students learn to create structured webpages using titles, headings, ordered and unordered lists, sections with background colors, internal hyperlinks, image insertion with attributes, multi-page profiles with links, frames for layouts such as the Indian flag and content navigation, and image maps with rectangular, circular, and polygonal regions. The course also introduces frame-based navigation for topics like Networks and Simulation. In JavaScript, learners practice dynamic web interaction by generating multiplication tables, working with sparse arrays and array methods, using Math and Date objects, calculating bills, displaying time-based greeting messages, validating form inputs such as passwords, and handling user input through prompts and textboxes. Styling concepts are taught using inline, internal, and external CSS, including hover effects, transitions, and opacity filters for images. Overall, the course provides a complete foundation in building interactive, styled, and user-friendly web applications using core web technologies.

### Course Objectives:

1. HTML tags
2. CSS
3. Development of static web site
4. Concepts of Java script
5. Development of dynamic web site

### Course Outcomes: After Completion of the Course, Students should be able to

- CO1:** Learn HTML tags and CSS
- CO2:** Develop static web pages using HTML
- CO3:** Use CSS in web pages
- CO4:** Understand basic concepts of JavaScript
- CO5:** Develop dynamic web pages

### PART-A

1. Write a HTML program to create a webpage about the different art forms of India, with appropriate title on the title bar. Use different heading tags for the headings, and list them using ordered list.
2. Write a HTML program to create sections in the document using appropriate tags and apply

different color as background to them. Use internal hyperlinks to move to different points within the page.

3. Write a HTML program to insert a picture on the webpage, giving description for the picture in a paragraph. Use properties of height, width, space, space and align, with different values.
4. Write a HTML Program, to create a profile of 2 pages, the First page containing the applicant's picture with personal details using unordered lists, and the second containing Educational details using tables. Use hyperlinks to move to the next page.
5. Using Frames create an Indian Flag and insert the image of chakra in the center.
6. Create a frame like structure based on the given diagram, such that When the first link is clicked, the contents of the first frame is filled with the corresponding information and when the second link is clicked the second frame is filled.

<ul style="list-style-type: none"><li>● <a href="#">Networks</a></li><li>● <a href="#">Simulation</a></li></ul>	Networks.....
	Simulation

7. Write a program in HTML to demonstrate the concept of Image map, for India map. Map for areas rectangle, Circle and polygon.

### **PART-B**

1. Write a program using JavaScript to do the multiplication table for a number entered by the user in the textbox.
2. Create a sparse array using the values entered by the user in the five textboxes, and use Array methods such as sort (), pop (), push (), reverse () and join ().
3. Create a math object and use methods ceil (), floor (), round () for rounding off the number, also use methods such as cos (), sin (), sqrt ().
4. Write a Program using JavaScript to print a bill for 5 items purchased by the user.
5. Write a program Using Date object, to display appropriate greeting message "Good Morning" or "Good Afternoon" or "Good Night", in an alert box with the user's name, after receiving the same in the prompt box.
6. To demonstrate the concept of styles, write a program applying internal style for paragraph tag, and override the same by applying inline style. Also create an external CSS file applying styles for the headings.
7. Create a registration form for creating an email account, having the input type elements like checkbox, radio button, select option, text area and submit button, and validate the textboxes for verifying the password.
8. Create a web page using two image files, which switch between one another as the mouse pointer moves over the image. Use on Mouse Out and on Mouse Over event handlers.
9. Using filters apply opacity feature to blur the image and using Transition apply hover feature, so the image will be transparent again when the mouse pointer is placed on the image.

1. HTML & CSS: The Complete Reference – *Thomas A. Powell*, McGraw-Hill
2. Web Technologies: HTML, JavaScript, PHP, Java, JSP, XML and AJAX – *Uttam K. Roy*, Oxford University Press
3. Internet & World Wide Web: How to Program – *Paul Deitel & Harvey Deitel*, Pearson
4. Learning Web Design – *Jennifer Niederst Robbins*, O'Reilly Media
5. JavaScript: The Definitive Guide – *David Flanagan*, O'Reilly Media
6. Beginning HTML, XHTML, CSS and JavaScript – *Jon Duckett*, Wiley
7. Web Programming with HTML5, CSS, and JavaScript – *John Dean*, Jones & Bartlett

#### REFERENCE BOOKS:

##### **Internet & World Wide Web – How to Program**

*Paul Deitel & Harvey Deitel*, Pearson Education

##### **Web Technologies: HTML, JavaScript, PHP, Java, JSP, XML and AJAX**

*Uttam K. Roy*, Oxford University Press

##### **HTML, XHTML & CSS: The Complete Reference**

*Thomas A. Powell*, McGraw-Hill Education

##### **JavaScript: The Definitive Guide**

*David Flanagan*, O'Reilly Media

##### **Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics**

*Jennifer Niederst Robbins*, O'Reilly Media

##### **Beginning HTML, XHTML, CSS and JavaScript**

*Jon Duckett*, Wiley

##### **Web Programming with HTML5, CSS, and JavaScript**

*John Dean*, Jones & Bartlett Learning

##### **Professional JavaScript for Web Developers**

*Nicholas C. Zakas*, Wrox

#### ELECTRONIC RESOURCES:

1. <https://www.greeksforgreeks.org/>
2. <https://www.w3schools.com/c/>
3. <https://www.freecodecamp.com/>

#### MATERIALS ONLINE:

1. Course template
2. Tech talk and Concept Video topics
3. Open-ended experiments
4. Model question paper – I
5. Model question paper – II
6. E-Learning Readiness Videos (ELRV)