GUJARAT TECHNOLOGICAL UNIVERSITY (GTU)

Competency-focused Outcome-based Green Curriculum-2021 (COGC-2021)
I– Semester

Course Title: **Static Webpage Design**
(Course Code: 4311603)

Diploma programme in which this course is offered	Semester in which offered
Information Technology	First

1.   RATIONALE

Internet is widely used in different areas such as banking, e-commerce, education and many others. Different technologies are used to develop web applications but HTML is the core component in all types of applications for formatting and presenting the web content. This course will impart skill sets related to designing HTML web pages, using cascading style sheets and embedding Java script using Kompozer. This course will also serve as a pre-requisite for the advanced web development technologies, which students will learn in the upcoming semester.

2.   COMPETENCY

The purpose of this course is to help the student to attain the following industry identified competency through various teaching learning experiences:

● **Develop web pages using HTML and Javascript.**

3.   COURSE OUTCOMES (COs)

The practical exercises, the underpinning knowledge and the relevant soft skills associated with the identified competency are to be developed in the student for the following Course Outcomes (COs) achievement :
   a) Design webpage using formatting, image and table tags.
   b) Use advanced HTML tags for designing interactive and semantic web pages.
   c) Design and publish websites using the Kompozer tool.
   d) Use CSS internal and/or external style sheets for designing web pages.
   e) Write client-side script using Javascript.

4.   TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P/2)	Examination Scheme				
				Theory Marks		Practical Marks		Total Marks
L	T	P	C	CA	ESE	CA	ESE	
0	0	4	2	0	0	25*	25	50

(*): For this practical only course, 25 marks under the practical CA has two components i.e. the assessment of micro-project, which will be done out of 10 marks and the remaining 15 marks are for the assessment of practical. This is designed to facilitate attainment of COs holistically, as there is no theory ESE.

Legends: L-Lecture; **T** – Tutorial/Teacher Guided Theory Practice; **P** -Practical; **C** – Credit, **CA** - Continuous Assessment; **ESE** -End Semester Examination.

5.   SUGGESTED PRACTICAL EXERCISES

The following practical outcomes (PrOs) are the sub-components of the COs. These PrOs need to be attained to achieve the COs.

S. No.	Practical Outcomes (PrOs)	Unit No.	Approx. Hrs. required
1	Use HTML text formatting tags to create web page as per given sample.	I	02
2	Use hyper link tag to navigate through different web pages as per given sample.	I	02
3	Use image tags to create web page as per given sample.	I	02
4	Use HTML table tags to create web page as per given sample.	I	02
5	Use sorted list to create web page as per given sample page.	II	02
6	Use unsorted list to create web page as per given sample page.	II	02
7	Use definition list to create web page as per given sample page.	II	02
8	Use semantic tags to organize web page contents as per given sample.	II	02
9	a. Create a student registration webpage using different HTML form elements. b. Create student feedback form using different HTML form elements.	II	02+02
10	Create a bank account opening form using different HTML form elements in Kompozer.	III	02
11	Use inline, internal and external style sheets for the student registration form and bank account form created in previous practical.	IV	02+02
12	a. Use different CSS elements to create and format your Profile Page (Note: use CSS Background, Text, Font, Tables, Links, Images, Margin etc) b. Create and format your class time table Page Using Different CSS Elements (Note: use CSS Background, Text, Font, Tables, Links, Images, Margin etc)	IV	02+02
13	Use JavaScript to perform the following operations: a. find roots of quadratic equation b. find the highest from given three values	V	02+02
14	Use JavaScript to check whether given character is vowel or consonant using if else ladder.	V	02
15	Use JavaScript to check whether given character is vowel or consonant using switch case.	V	02
16	Use JavaScript to print first 10 even numbers.	V	02
17	Use JavaScript to calculate power of given number.	V	02
18	Use JavaScript to print multiplication table of given number.	V	02
19	Use JavaScript user defined functions to perform the following operations: a. to calculate sum of 1 to n	V	02+02

S. No.	Practical Outcomes (PrOs)	Unit No.	Approx. Hrs. required
	b. to check whether given number is prime or not		
20	Use JavaScript to perform the following operations: a. take input of student name and address and display in a dialog box. b. change background color of webpage as selected by user from a list of colors given in combo box.	V	02+02
21	Use JavaScript to perform the following operations: a. calculate the factorial of a given number entered into a textbox. Display the result in another textbox. b. perform arithmetic operations on two numbers entered into textboxes. Use Radio buttons to select arithmetic operations (Addition, Subtraction, Multiplication and Division). Display the result in another textbox.	V	02+02
	Total		**56**

Note

i. More **Practical Exercises** can be designed and offered by the respective course teacher to develop the industry relevant skills/outcomes to match the COs. The above table is only a suggestive list*.*

ii. Care must be taken in assigning and assessing study report as it is a first-year study report. Study report, data collection and analysis report must be assigned in a group. Teacher has to discuss about type of data (which and why) before group start their market survey.

iii. The following are some **sample** 'Process' and 'Product' related skills (more may be added/deleted depending on the course) that occur in the above listed **Practical Exercises** of this course required which are embedded in the COs and ultimately the competency

S. No.	Sample Performance Indicators for the PrOs	Weightage in %
1	Identify suitable approach to implement logic	25
2	Make a use of HTML Tags	20
3	Use HTML to build efficient websites	25
4	Follow different tests to check website	10
5	Interpret the result and conclude	20
	Total	**100**

6.   MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

The major equipment with broad specifications for the PrOs is a guide to procure them by the administrators to usher in uniformity of practicals in all institutions across the state.

S. No.	Equipment Name with Broad Specifications	PrO. No.
1	Computer system with operating system and browser that supports javascript.	All
2	HTML IDEs and Code Editors Open Source: Kompozer.	All

7.   AFFECTIVE DOMAIN OUTCOMES

The following *sample* Affective Domain Outcomes (ADOs) are embedded in many of the above-mentioned COs and PrOs. More could be added to fulfill the development of this course competency.

a) Work as a leader/a team member.
b) Follow ethical practices.

The ADOs are best developed through the laboratory/field-based exercises. Moreover, the level of achievement of the ADOs according to Krathwohl's 'Affective Domain Taxonomy' should gradually increase as planned below:

i.   'Valuing Level' in 1st year
ii.   'Organization Level' in 2nd year.
iii. 'Characterization Level' in 3rd year.

8.   UNDERPINNING THEORY

The major underpinning theory is given below based on the higher level UOs of *Revised Bloom's taxonomy* that are formulated for development of the COs and competency. If required, more such UOs could be included by the course teacher to focus on attainment of COs and competency.

Unit	Unit Outcomes (UOs) (4 to 6 UOs at different levels)	Topics and Sub-topics
Unit - I **Basics of HTML**	Students will be able to: - 1a. Explain different HTML Tags. 1b. Write the procedure to create a Webpage using formatting HTML tags. 1c. Write steps to create a Webpage using image tags. 1d. Write steps to create a Webpage using table tags.	1.1 Introduction to HTML 1.2 Syntax - Tags and Attributes 1.3 Formatting Tags (Body, Heading Styles, Paragraph, q, sub, sup, Mark, Pre, Special Characters, head, title) 1.4 Image Tags (img, figure, figcaption, map, area) 1.5 Hyper linking 1.6 Tables (table, th, tr, td, col, colgroup, caption)

Unit - II
 	
Advanced HTML
	Students will be able to:-
	2a. Explain types of Lists.
	2b. Write steps to use different types of lists in a web page.
	2c. Write procedure to organize web page contents in semantic structure.
	2d. Write steps to incorporate media contents into a webpage.
	2e. Write procedure to use different HTML form elements.
		2.1 Lists
		     2.1.1 Sorted List
		     2.1.2 Unsorted List
		     2.1.3 Definition List
		2.2 Semantic Elements (header, nav, section, article, aside, footer)
		2.3 Media Tags (audio, video, embed,svg)
		2.4 HTML Form
		     2.3.1 Form Object
		     2.3.2 Form Elements and its properties and events (Input types-Text, Date,email etc.,

Unit	Unit Outcomes (UOs) (4 to 6 UOs at different levels)	Topics and Sub-topics
		Datalist, fieldset, legend, select, option, optiongroup)
Unit - III **Working with Kompozer**	3a. Explain use of Kompozer tool for web development. 3b. Write steps to create a web page using Kompozer. 3c. Write procedure to deploy website.	3.1 Introduction to Kompozer open source tool. 3.2 Set up of work environment, Menu bar, toolbars, page tab, site manager, page area. 3.3 Creating simple Web page in Kompozer 3.4 Working with HTML tags using Kompozer 3.5 Creating a website Using Kompozer 3.6 Publishing a Website Using Kompozer
Unit - IV **Cascading Style Sheets (CSS)**	4a. Explain basic syntax and rules of CSS. 4b. Describe types of CSS. 4c. Write procedure to apply CSS for enhancing web page design. 4d. Write steps to create CSS selectors to format a group of elements.	4.1 Introduction to CSS 4.2 CSS Types (inline Style, Embedded Style, Linked Style) 4.3 Applying CSS styles to web page elements 4.4 div Tag 4.5 CSS Selectors (Class and ID)
Unit - V **JavaScript**	5a. Explain basic syntax of Javascript. 5b. Write steps to apply operators to perform different calculations. 5c. Describe the functions available in Javascript. 5d. Write steps to apply conditional and loop statements for logical decision making and repetition. 5e. Write procedure to create the user defined function that performs a specific task. 5f. Write process to develop event-oriented web pages.	5.1 Introduction to Javascript 5.2 Basic Syntax - Statements, Comments, Data types, Variables 5.3 Operators- Arithmetic, logical, comparison 5.4 Working with built-in functions(alert(), prompt(), parsing functions, eval()) 5.5 Conditional statements 5.6 Loop statements 5.7 Working with user defined functions. 5.8 Document Object Model – Accessing HTML elements into javascript(Window ,Document, Form, Input elements , noscript tag) 5.9 HTML Events(onchange, onclick, onmouseover, onmouseout, onkeydown, onload)

9.   SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching/ Practical Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Basics of HTML	08	----Not Applicable---			
II	Advanced HTML	12				
III	Working with Kompozer	02				
IV	Cascading Style Sheets (CSS)	08				
V	JavaScript	26				
	Total	**56**				

10.   SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related **co-curricular** activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should perform following activities in group and prepare reports of about 5 pages for each activity. They should also collect/record physical evidences for their (student's) portfolio which may be useful for their placement interviews:

   a)   Identify tools used for web page development and present its features.
   b)   Undertake course "HTML" available on Swayam online platform. (https://onlinecourses.swayam2.ac.in/aic20_sp11/preview)
   c)   Undertake course "JavaScript for Beginners Specialization" available on coursera online platform. (https://www.coursera.org/specializations/javascript-beginner) or any other such site.
   d)   Undertake course "HTML, CSS, and Javascript for Web Developers" available on coursera online platform. (https://www.coursera.org/learn/html-css-javascript-for-web-developers) or any other such site.

11.   SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various outcomes in this course:

   a)   Massive open online courses (**MOOCs**) may be used to teach various topics/sub topics.
   b)   Guide student(s) in undertaking micro-projects.
   c)   **'L' in section No. 4** means different types of teaching methods that are to be employed by teachers to develop the outcomes.
   d)   About **20% of the topics/sub-topics** which are relatively simpler or descriptive in nature is to be given to the students for **self-learning**, but to be assessed using different assessment methods.
   e)   With respect to **section No.10**, teachers need to ensure to create opportunities and provisions for **co-curricular activities**.
   f)   Guide students for open source HTML editors.

12.   SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her in the beginning of the semester. In the first four semesters, the micro-project are group-based (group of 3 to 5). However, **in the fifth and sixth semesters**, the number of students in the group should *not exceed three.*

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs. Each student will have to maintain dated work diary consisting of individual contribution in the project work and give a seminar presentation of it before submission. The duration of the microproject should be about **14**-**16** *(fourteen to sixteen) student engagement hours* during the course. The students ought to submit micro-project by the end of the semester to develop the industry-oriented COs.

A suggestive list of micro-projects is given here. This has to match the competency and the COs. Similar micro-projects could be added by the concerned course teacher:

a) Construct departmental website
b) Develop any domain specific website (Food, Automobiles, Educational, Business etc.)
c) Develop a website showcasing information about electronic wastes and its dumping process.

13.   SUGGESTED LEARNING RESOURCES

S. No.	Title of Book	Author	Publication with place, year and ISBN
1	HTML 5 Blackbook	DT Editorial services	Dreamtech press, New Delhi, ISBN : 9789351199076
2	HTML & CSS: The Complete Reference	Thomas Powell	Tata McGrew Hills, New Delhi, 2010 ISBN : 9780070701946
3	JavaScript the Complete Reference	Thomas Powell	Tata McGrew Hills, New Delhi, 2004 ISBN : 9780070590274

14.   SOFTWARE/LEARNING WEBSITES

a) www.w3schools.com/html/
b) www.csstutorial.net/
c) https://www.w3schools.com/css/default.asp
d) https://www.w3schools.com/js/default.asp
e) https://www.thesitewizard.com/kompozer/index.shtml
f) https://www.tutorials4u.com/editors/using-komposer-web-editor.htm

15.   PO-COMPETENCY-CO MAPPING

Semester-I	Static Webpage Design (Course Code: 4311603)						
	POs						
Competency & Course Outcomes	PO 1 Basic & Discipline specific know-ledge	PO 2 Problem Analysis	PO 3 Design/ develop-ment of solutions	PO 4 Engineering Tools, Experimen-tation &Testing	PO 5 Engineering practices for society, sustain-ability & environ-ment	PO 6 Project Manage-ment	PO 7 Life-long learning
Competency	*Develop web pages using HTML and Javascript.*						
Course Outcomes CO a) Design webpage using formatting, image and table tags.	3	-	-	3	-	-	-
CO b) Use advanced HTML tags for designing interactive and semantic web pages.	3	-	2	-	2	-	3
CO c) Design and publish websites using the Kompozer tool.	3	3	3	3	3	3	3
CO d) Use CSS internal and/or external style sheets for designing web pages.	3	-	2	-	2	-	3
CO e) Write client side script using Javascript	3	3	3	-	2	-	3

*Legend: '**3**' for high, '**2**' for medium, '**1**' for low and '**-**' for no correlation of each CO with PO.*

16.   COURSE CURRICULUM DEVELOPMENT COMMITTEE

GTU Resource Persons

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