A. Course Handout

Institute/School Name	Chitkara University Institute of Engineering and Technology		
Department Name	Department of Computer Science & Engineering		
Programme Name	Bachelor of Engineering (B.E.), Computer Science & Engineering		
Course Name	Front End Engineering-I	Session	2022-2023
Course Code	22CS004	Semester/Batch	2ND /2022
L-T-P (Per Week)	4-0-6	Course Credits	04
Course Coordinator	Dr. Renu Popli		

1. Objectives of the Course

The main objectives of the course are:

- Describe the general landscape of current front end technologies and how they can be utilized to solve real-life web development problems.
- To provide the required skills of front end technologies and project-based experience needed for entry into web design and development careers.
- To provide knowledge of variety of strategies and tools to create well-designed websites.

2. Course Learning Outcomes

Student should be able to:

	Course Outcome	POs	CL	KC	Sessions
CLO01	Understand the basics of designing a websites by creating web pages, linking them, embedding images, tables and designing pages layouts.	PO4,PO10,PO11	K2, K3, K6	Conceptual, Meta-cognitive Knowledge	3
CLO02	Describe and apply the basic components of CSS and flexboard to style and enhance the design of any webpage.	PO3, PO4	K3	Conceptual Knowledge	12
CLO04	Understand and apply scripting to manipulate elements in the document object model.	PO11,PO12	K3, K6	Conceptual, Meta-cognitive Knowledge	8
CLO05	Plan, design, and produce user interfaces, websites, and/or web applications that utilize JavaScript and jQuery programming techniques to enable advanced functionality, interactivity, animation, and/or special effects.	PO7,PO9	K3, K6	Conceptual, Meta-cognitive Knowledge	7
Total Contact Hours					**60**

Revised Bloom's Taxonomy Terminology
   *Cognitive Level =CL
   *Knowledge Categories = KC

Course Learning Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CLO01			M	M	L					H	H	L
CLO02			M	M								
CLO03										L	M	
CLO04	H		M	L	H		L		L		H	L

H=High, M=Medium, L=Low

3. ERISE Grid Mapping

Feature Enablemnet	Level(1-5, 5 being highest)
Entrepreneurship	5
Research	2
Innovation	4
Skills	5
Employability	5

4. Recommended Books

RB1: 'Web Enabled Commercial Application Development using HTML, JavaScript, DHTML and PHP' by Ivan Bayross, 4th Edition, BPB Publications.

RB2: 'The Complete Reference HTML & XHTML' by Thomas Powell, 5th Edition, Tata McGraw-Hill Company Limited.

RB3: 'HTML 4.0' by E. Stephen Mack, Janan Platt, Anaya Multimedia publication.

RB4: 'Mastering HTML, CSS & JAVAScript Web Publishing' by Laura Lemay, Rafe Coburn, Jennifer Kyrnin, 7th edition, SAMS publication.

RB 5: 'Learning web designing: a beginner's guide to HTML, CSS, JavaScript,and web graphics' by Niederst Robbins, 4th Edition, Oreilly Publication

5. Other readings and relevant websites:

S.No.	Link of Journals, Magazines, websites and Research Papers
1.	https://developer.mozilla.org/en-US/docs/Web/HTML
2.	https://bennettfeely.com/flexplorer/
3.	https://www.codeschool.com/courses/front-end-foundations

4.	https://javascript.info/
5.	https://developer.mozilla.org/en-US/docs/Web/API/Document_Object_Model

6. **Recommended Tools and Platforms**

Any Text Editor like Notepad++, Sublime, Visual Studio Code etc.

7. **Course Plan:**

Session	Topic	Details
1	Introduction to HTML, HTML Tags, Lists and Image	HTML Anatomy, HTML Structure (The <html> tag, Head, Page Title, Body), Headings, Divs, Attributes, Displaying Text, Line Breaks, Unordered Lists, Ordered Lists, Images, Anchor Tag.
2	Tables	Introduction to Tables, Create a Table, Table Rows, Table Data, Table Headings, Table Borders, Spanning Columns & Rows, Table Body.
3	Forms & Validations	Introduction to HTML Forms, Input (Text , Email, Password, Range, Checkbox, Radiobutton, Date & Time), Label, Select Tag, Textarea element, Submit Form, Form Validation.
4-5	Introduction to CSS & Selectors	Intro to CSS, Inline Styles, The <style> Tag, The .css file, Linking the CSS File, Tag Name, Class Name, Multiple Classes, ID Name, Classes and IDs, Specificity, Chaining Selectors, Nested Elements, Chaining and Specificity, Multiple Selectors.
6	Box Model	The Box Model, Height and Width, Borders, Border Radius, Padding, Margins, Auto Margin Collapse, Minimum and Maximum Height and Width, Overflow, Resetting Defaults, Visibility.
7	Basic Layout	Flow of HTML, Positions (Relative, Absolute, Fixed, Z-Index), Inline Display, Block Display, Inline-Block Display, Float, Clear.
8	Typography	Font style, Text Alignment, Color, Opacity, Background Image Word Spacing, Letter Spacing, Line Height Anatomy, Linking Fonts, Font-Face
9-10	CSS Grid	Introduction to Grids, Grid Template, Grid Contained , Grid Items, Fraction, Repeat, minmax, Grid Gap.
11-12	Responsive Design	Media Queries **-** Responsive Web Design, Media Queries, Range, Dots Per Inch (DPI), And Operator, Comma Separated List, Breakpoints Sizing elements - Relative Measurements, Em, Rem, Percentages (Height, Width, Padding , Margin), Scaling Images and Videos.
LAB EVALUATION-1		
13-15	Layout with Flexbox	What is Flexbox? display: flex., inline-flex., justify-content., align-items, flex-grow., flex-shrink, flex-basis., flex., flex-wrap, Align-content, flex-direction, flex-flow, Nested Flexboxes.
16-17	Javascript basics	Intro to JS, console in Dev tools, variables, data types, arithmetic operators, conditional statement, loops, variables scope.
18-19	Array and Objects	Arrays, Properties and methods in Array, Nested Arrays, using the parseInt(), Date object, Math object, String object.
20-22	jQuery introduction	Why jQuery?, jQuery Methods, jQuery Library, Adding jQuery, .ready(), Targeting by Class, Targeting by id, jQuery Objects, Event Handlers.
23-24	jQuery Effects	Introduction, .hide(), .show(), .toggle(), fading, .fadeToggle(), Sliding.
25-26	jQuery Style Methods	CSS & jQuery, .css(), CSS II, .animate(), .addClass(), removeClass(), .toggleClass()
LAB EVALUATION-2		

27-30	jQuery and DOM	What is the DOM?, The DOM as a Tree Structure,The document keyword, Select and Modify Elements, Style an element, Create and Insert Elements, Remove an Element, Traversing the DOM
FINAL EVALUATION		

8. Delivery/Instructional Resources

Lecture No.	Topics	Web References	Audio-Video
1-3	Introduction to HTML, HTML Tags, Lists and Image, Forms & Validations	https://onlinecourses.sway am2.ac.in/nou20_cs05/pre view https://developer.mozilla.o rg/en-US/docs/Web/HTML https://onlinecourses.sway	https://onlinecourses.swayam 2.ac.in/aic20_sp11/unit?unit= 4&lesson=7 https://nptel.ac.in/courses/10 6106222
4-12	Introduction to CSS & Selectors, Box Model, Basic Layout, Typography, CSS Grid, Responsive Design	https://developer.mozilla.o rg/en-US/docs/Web https://css-tricks.com/	https://nptel.ac.in/courses/10 6106222 https://www.youtube.com/wa tch?v=h_RftxdJTzs
13-15	Layout with Flexbox	https://developer.mozilla.o rg/en-US/docs/Web/CSS/CSS_Fle xible_Box_Layout/Basic_Co ncepts_of_Flexbox https://bennettfeely.com/fl explorer/ https://css-tricks.com/snippets/css/a-guide-to-flexbox/	https://www.youtube.com/wa tch?v=fYq5PXgSsbE https://www.youtube.com/wa tch?v=7kVeCqQCxlk https://www.youtube.com/wa tch?v=JJSoEo8JSnc
16-19	Javascript basics, Array and Objects	https://developer.mozilla.o rg/en-US/docs/Web/JavaScript/G uide	https://nptel.ac.in/courses/10 6105084 https://www.youtube.com/wa tch?v=qoSksQ4s_hg
20-30	jQuery introduction, jQuery Effects, jQuery Style Methods, jQuery and DOM	https://jquery.com/ https://developer.mozilla.o rg/en-US/docs/Web/API/Docume nt_Object_Model	https://www.youtube.com/wa tch?v=hMxGhHNOkCU https://www.youtube.com/wa tch?v=_4XvXoZoBNU

9. Action plan for different types of learners

Slow Learners	Average Learners	Fast Learners
Remedial Classes, Doubt Sessions, Guided Tutorials	Workshop, Doubt Session	Project/Hackathons

10. Evaluation Scheme & Components:

Evaluation Component	Type of Component	No. of Assessments	Weightage of Component	Mode of Assessment
Component 1	Lab Evaluation 1*	01	30%	Offline
	Lab Evaluation 2*	01	30%	Offline
Component 2	Final Project Evaluation**	01	40%	Offline
Total			**100%**	

* Lab Evaluation is mandatory evaluation taken twice in a semester. Both are mandatory evaluations based on developed project. It includes use-case designing, file work and viva.

**It is mandatory evaluation including project viva, file and use-case/project designing. Further, as per Academic Guidelines minimum 75% attendance is required to become eligible for appearing in Final Project Evaluation.

11. Syllabus of the Course:

Subject : Front End Engineering-I			
S.No.	Topic (s)	No. of Sessions	Weightage %
1	Introduction to HTML, HTML Tags, Lists and Image, Forms & Validations, Introduction to CSS & Selectors, Box Model, Basic Layout, Typography, CSS Grid, Responsive Design.	**12**	**40%**
2	Layout with Flexbox, Javascript basics, Array and Objects	**7**	**23%**
3	jQuery introduction, jQuery Effects, jQuery Style Methods, jQuery and DOM	**11**	**37%**

This Document is approved by:

Designation	Name	Signature
Course Coordinator	Dr. Renu Popli	
Head-Academic Delivery	Dr. Navjeet Kaur	
Dean	Dr. Monit Kapoor	
Date (DD/MM/YYYY)	21/03/2023	