

A. Course Handout

Institute Name	Chitkara University Institute of Engineering & Technology		
Department Name	Department of Computer Science & Engineering		
Programme Name	Bachelor of Engineering (B.E.)-Computer Science & Engineering		
Course Name	Introduction to Web Technologies	Session	2021-2022
Course Code	CS111	Semester/Batch	1st/2021
Lecture/Tutorial (Per Week)	0-0-10	Course Credit	4

1. Objectives of the Course

The main objectives of the course are:

- To provide knowledge of Hypertext Markup Language and to enable students to build user friendly websites.
- To provide the required skills 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:

CLO01: Identify the basis of designing a Website; create Web pages, links, images, tables and pages layouts in HTML.

CLO02: Describe and identify the use of JavaScript and successfully place it into Web pages and also recognize the uses of JavaScript.

CLO03: Use JavaScript to manipulate elements in the DOM to change appearance and visibility.

CLO04: Describe how intended website design features will specifically benefit a target user group content strategy.

3. Recommended Books (Reference Books/Text 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

4. Other readings and relevant websites

S.No.	Link of Journals, Magazines, websites and Research Papers
1.	https://www.w3schools.com/
2.	http://www.quirksmode.org/dom/intro.html
3.	https://www.codeschool.com/courses/front-end-foundations
4.	https://www.w3schools.com/jquery/
5.	http://nptel.ac.in/courses/106105084/13

5. Recommended Tools and Platforms

Sublime Text/Notepad++/Any text editor

Coding Ninjas (online platform- <https://www.codingninjas.com/>)

6. Course Plan

Lecture No.	Topic	Detailed Contents
1-2	Getting Started with Basics	<ul style="list-style-type: none"> • Welcome to Course • History Of Web • Client Server Architecture • Frontend and Backend • What Happens When You Visit a Website
3-5	Introduction to HTML	<ul style="list-style-type: none"> • HTML Page Structure • Title Tag • Basic HTML Tags • Unordered Lists • Ordered Lists • Adding Lists to Blog page • Adding Image to Blog Page • Adding Header To Blog Page • Learning Anchor Tag, Internal and External links
6-8	More on HTML	<ul style="list-style-type: none"> • Div Tag • Semantic Tags • Adding Internal Links to Web Page • Block vs Inline Elements • Text Formatting Tags • Special Characters • Adding Tables • More Attributes and Tags Related to Table
9	Forms	<ul style="list-style-type: none"> • Creating a Simple Form • Input Types • Attributes of form elements • Radio button and Checkbox • Select, Textarea and Button • Form Attributes • Media Tags • Favicon and Meta Tags
10-12	Introduction to CSS	<ul style="list-style-type: none"> • CSS Introduction • Blog Page Structure

		<ul style="list-style-type: none"> • Adding Styles Using CSS • Adding Styles Using External CSS • Preference of Rules • Chrome Dev Tools • Class Selector • ID Selector • Specificity of Selectors • Grouping and Nesting of CSS Selectors
13-15	Styling with CSS	<ul style="list-style-type: none"> • Adding Color • CSS Units • How to Add Border to an Element • Text Styling • Adding Background to an Element • Margins • Padding • Display Property • Aside Section of Blog Page • Position Property • Box Model • Min Max Width
16-17	Resume Project	<ul style="list-style-type: none"> • Resume Project Intro • HTML Structure • Adding Header Background image • Navigation • Adding Social Icons • About Section
18-20	Flex	<ul style="list-style-type: none"> • Flex Intro • Flex direction • Flex Wrap • Flex Grow and Flex Shrink • Flex justify content • Align content • Converting Resume Code to Flex • Resume Skills section and Heading • Creating Skill indicators
21-23	Completing Resume	<ul style="list-style-type: none"> • Overflow-Wrap • Gradients • Link Related Pseudo Classes • Lightbox Animation • Pseudo Elements • Using Before and After Pseudo elements

24-26	Responsive Design	<ul style="list-style-type: none"> • What and Why of Responsive Designs • Different ways to make Responsive • Measurement Units for Responsive Designs • Viewport Meta Tag • Media Queries • Desktop First vs Mobile First • Responsiveness Check on Resume • Media Queries on Resume
27-29	Animations and 3d Space	<ul style="list-style-type: none"> • Transitions and Transforms • Creating a Simple Animation • Animation Property • Multiple Animations • Animate.css • Starting with 3D Cube Animation • Building Second Face of Cube
30-34	Bootstrap	<ul style="list-style-type: none"> • What are Frontend Frameworks • Getting Started with Bootstrap • Adding Bootstrap to your Project • Bootstrap Breakpoints • Bootstrap Grid System • Code Using Bootstrap Grid System • Margin and Display Utilities • Other Utility Classes • Bootstrap Components • Modals • Collapse Component • Nav • Navbar • Jumbotron Template
35	Major Project	<ul style="list-style-type: none"> • Web Design Process • CSS Variables • CSS Variables Scope • Project Demo Video
36-42	Starting with JavaScript	<ul style="list-style-type: none"> • Intro to JavaScript • History of JavaScript • Chrome Dev Tools • Variables • Null vs Undefined • Operators • Type Coercion • Conditionals • Loops

43-48	Javascript functions and Arrays	<ul style="list-style-type: none"> • Functions • Variable Length Arguments • Function Hoisting • Functions and Scope • Function within Function • Function Expressions • Function Declaration vs Expressions • Passing function as arguments • Arrays • Functions on Arrays • Splice function • Iterating over arrays
49-53	Object and Timing Events	<ul style="list-style-type: none"> • Objects • Square Bracket Notation • Deleting Properties • How are Objects Stored • Iterating Over Objects • Nested Objects • Arrays and Objects • Iterating over array using for in • Timing Events • Countdown Timer
54-57	Understanding Dom	<ul style="list-style-type: none"> • DOM • Accessing DOM • Fetching Elements • Event Handling • Script Tag • External JS File • Other Mouse and Keyboard Events • Propagation of Event • Strict Mode
58-60	Calculator Project	<ul style="list-style-type: none"> • VS Code • Calculator Demo • Hint - Calculator

7. Evaluation Scheme & Components:

Evaluation Component	Type of Component	No. of Assessments	Weightage of Component	Mode of Assessment
Component 1	Project-based assessment	02*	20%	Online /Offline

Component 2	Sessional Test	03**	30%	Online /Offline
Component 3	End Term Examination	01	50%	Online /Offline
Total		100%		

*Project based assessment is mandatory, the ERP system automatically picks the average marks of best 02.

**Out of 03 STs, the ERP system automatically picks the average marks of best 02 STs.

8. Details of Evaluation Components:

Evaluation Component	Description	Syllabus Covered (%)	Timeline of Examination	Weightage (%)
Component 1	Project-based assessment	100%	Mid of semester and End of semester	20%
Component 2	Sessional Test-1	30%	5 th week of semester	30%
	Sessional Test-2	25%	7 th week of semester	
	Sessional Test-3	25%	9 th week of semester	
Component 3	End Term Examination*	100%	At the end of the semester	50%
Total				100%

*As per Academic Guidelines minimum 75% attendance is required to become eligible for appearing in the End Semester Examination.

9. Syllabus of the Course:

Subject: Introduction to Web Technologies	Subject Code: CS 111
--	-----------------------------

S.N.	Topic (s)	No. of Lectures	Weightage %
1	Getting Started with Basics <ul style="list-style-type: none"> Welcome to Course History Of Web Client Server Architecture Frontend and Backend What Happens When You Visit a Website 	1	3%
2	Introduction to HTML	1	4%

	<ul style="list-style-type: none"> • HTML Page Structure • Title Tag • Basic HTML Tags • Unordered Lists • Ordered Lists • Adding Lists to Blog page • Adding Image to Blog Page • Adding Header To Blog Page • Learning Anchor Tag 		
3	More on HTML <ul style="list-style-type: none"> • Div Tag • Semantic Tags • Adding Internal Links to Web Page • Block vs Inline Elements • Text Formatting Tags • Special Characters • Adding Tables • More Attributes and Tags Related to Table 	1	6%
4	Forms <ul style="list-style-type: none"> • Creating a Simple Form • Input Types • Attributes of form elements • Radio button and Checkbox • Select, Textarea and Button • Form Attributes • Media Tags • Favicon and Meta Tags 	2	6%
5	Introduction to CSS <ul style="list-style-type: none"> • CSS Introduction • Blog Page Structure • Adding Styles Using CSS • Adding Styles Using External CSS • Preference of Rules • Chrome Dev Tools • Class Selector • ID Selector • Specificity of Selectors • Grouping and Nesting of CSS Selectors 	1	6%
6	Styling with CSS <ul style="list-style-type: none"> • Adding Color • CSS Units • How to Add Border to an Element • Text Styling 	1	6%

	<ul style="list-style-type: none"> • Adding Background to an Element • Margins • Padding • Display Property • Aside Section of Blog Page • Position Property • Box Model • Min Max Width 		
7	Resume Project <ul style="list-style-type: none"> • Resume Project Intro • HTML Structure • Adding Header Background image • Navigation • Adding Social Icons • About Section 	1	6%
8	Flex <ul style="list-style-type: none"> • Flex Intro • Flex direction • Flex Wrap • Flex Grow and Flex Shrink • Flex justify content • Align content • Converting Resume Code to Flex • Resume Skills section and Heading • Creating Skill indicators 	2	4%
9	Completing Resume <ul style="list-style-type: none"> • Overflow-Wrap • Gradients • Link Related Pseudo Classes • Lightbox Animation • Pseudo Elements • Using Before and After Pseudo elements 	1	4%
10	Responsive Design <ul style="list-style-type: none"> • What and Why of Responsive Designs • Different ways to make Responsive • Measurement Units for Responsive Designs • Viewport Meta Tag • Media Queries • Desktop First vs Mobile First • Responsiveness Check on Resume • Media Queries on Resume 	2	6%
11	Animations and 3d Space <ul style="list-style-type: none"> • Transitions and Transforms • Creating a Simple Animation • Animation Property 	2	6%

	<ul style="list-style-type: none"> • Multiple Animations • Animate.css • Starting with 3D Cube Animation • Building Second Face of Cube 		
12	Bootstrap <ul style="list-style-type: none"> • What are Frontend Frameworks • Getting Started with Bootstrap • Adding Bootstrap to your Project • Bootstrap Breakpoints • Bootstrap Grid System • Code Using Bootstrap Grid System • Margin and Display Utilities • Other Utility Classes • Bootstrap Components • Modals • Collapse Component • Nav • Navbar • Jumbotron Template 	2	6%
13	Major Project <ul style="list-style-type: none"> • Web Design Process • CSS Variables • CSS Variables Scope • Project Demo Video 	2	6%
14	Starting with Javascript <ul style="list-style-type: none"> • Intro to Javascript • History of Javascript • Chrome Dev Tools • Variables • Null vs Undefined • Operators • Type Coercion • Conditionals • Loops 	1	6%
15	Javascript functions and Arrays <ul style="list-style-type: none"> • Functions • Variable Length Arguments • Function Hoisting • Functions and Scope • Function within Function • Function Expressions • Function Declaration vs Expressions • Passing function as arguments • Arrays • Functions on Arrays • Splice function 	2	5%

	<ul style="list-style-type: none"> Iterating over arrays 		
16	Object and Timing Events <ul style="list-style-type: none"> Objects Square Bracket Notation Deleting Properties How are Objects Stored Iterating Over Objects Nested Objects Arrays and Objects Iterating over array using for in Timing Events Countdown Timer 	2	5%
17	Understanding Dom <ul style="list-style-type: none"> DOM Accessing DOM Fetching Elements Event Handling Script Tag External JS File Other Mouse and Keyboard Events Propagation of Event Strict Mode 	1	5%
18	Calculator Project <ul style="list-style-type: none"> VS Code Calculator Demo Hint - Calculator 	1	3%
20	Closures <ul style="list-style-type: none"> Revisiting Old Concepts - Window Object Revisiting Old Concepts - Scopes Avoid Global Variables IIFE Let vs IIFE Closures More on Closures Closures and let Let in for loops Arrow Functions Bindings in Arrow Function 	2	1%
21	Constructors and Prototypes <ul style="list-style-type: none"> Intro to Lecture This Keyword This in Strict Mode Function to create Objects Constructor Adding Behaviour to Objects What is a Prototype ? 	2	1%

	<ul style="list-style-type: none"> • Why Prototypes ? • More Properties around Prototype • Objects • object vs Object() • Class • Class Expressions and Hoisting • Inheritance Using Classes 		
23	JQuery-1 <ul style="list-style-type: none"> • Introduction to JQuery • Writing Code Using JQuery • Modifying CSS Using Query • Event Handling Using JQuery • Explore JQuery! 	2	5%

This Document is approved by:

Designation	Name	Signature
Course Coordinator	Ms. Navjeet Kaur	
Program Head	Dr. Raj Gurang Tiwari	
Dean	Dr. Meenu Khurana	
Date (DD/MM/YYYY)	30/11/2021	