Faculty of Engineering & Technology
Bachelor of Technology (B. Tech)
(W. E. F.: 2023-24)

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Name of Faculty	:	Faculty of Engineering & Technology
Name of Program	:	Bachelor of Technology (B.Tech.) - Artificial Intelligence and Data Science
Course Code	:	2BAI01
Course Title	:	Web Technology
Type of Course	:	Professional Core (PC)
Year of Introduction	:	2023-24

Prerequisite	:	Today's world is driven by Internet based applications. The rationale behind this course is to impart the knowledge of java script based framework for web programming among students of Information Technology. Students will learn advanced web programming concepts related to Java script, Angular JS, Node JS and MongoDB.
Course Objective	:	interpret the fundamental structure of web designing technologies, apply these concepts to create both static and dynamic web pages, and design interactive web pages that incorporate effective validation techniques.
Course Outcomes	:	At the end of this course, students will be able to:
	CO1	Interpret the basic structure of web designing technologies
	CO2	Apply the concepts of web technologies in designing static and dynamic web pages
	CO3	Design interactive web pages incorporating validation techniques

Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
				Theory Marks		Practical Marks		Total Marks
L	**T**	**P**	**C**	**SEE**	**CIA**	**SEE**	**CIA**	
2	0	2	3	70	30	30	20	150

Legends: ***L****-Lecture;* ***T****–Tutorial/Teacher Guided Theory Practice;* ***P*** *– Practical,* ***C*** *– Credit,* ***SEE*** *– Semester End Examination,* ***CIA*** *- Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.))*

Course Content

Unit No.	Topics	Teaching Hours	Weightage	Mapping with CO
1	**Introduction:** Basics of WWW, HTTP protocol methods and headers, HTTP Request and Response, Architecture of web browser, Web server installation and configuration, Web security, CORS, Understanding SEO	03	05%	CO1
2	**Basics of HTML and CSS**: Structure of HTML page, HTML tags for data formatting, tables, links, images, meta tags, frames, html form tags, media, APIs, HTML5 tags and validation. Need for CSS, Syntax and structure, CSS rules for Backgrounds, Colors and properties, Manipulating texts, Fonts, borders and boxes, Margins, Padding Lists, CSS Positioning. Animations, Tool-Tips, Style images, Variables, Media Queries, Wildcard Selectors (*, ^ and $) in CSS, Working with Gradients, Pseudo Class, Pseudo elements, basic of frameworks like Bootstrap	08	15%	CO1
3	**Java Script:** JavaScript Syntax, Types of JavaScript, variables, arrays, functions, conditions, loops, Pop up boxes, JavaScript objects and DOM, JavaScript inbuilt functions, JavaScript validations, Regular expressions, Event handling with JavaScript, Call-backs in JavaScript, Function as arguments in JavaScript, Object concepts in JavaScript, JSON	10	20%	CO2
4	**Programming with PHP**: Difference between Client side and Server side scripting, Structure of PHP page, PHP Syntax: variables, decision and looping with examples, PHP and HTML, Arrays and Functions, String, Form processing, File uploads, Dates and time zone, Working with Regular Expressions, Exception Handling , Basic concepts of Session and State, State manageme	10	25%	CO2
5	**PHP Basics Introduction**: Introduction to Server side programming , PHP variables, decision and looping with examples, PHP and HTML, Arrays, Functions, Browser control and detection, String, Form processing, File uploads, Dates and timezone, Working with	07	15%	CO2

	Regular Expressions, Exception Handling, Working with JSON data, Object Oriented Programming with PHP			
6	**Session and State Management**: Session and State Management using PHP Need of session management, Various techniques for state and session management like: Hidden Fields, Query String, Cookie and Session Database Connectivity using PHP: Basic commands for database connection and query execution with CURD examples, Object oriented database access using PHP	08	20%	CO3
7	**Advanced Concepts:** Asynchronous Web requests using AJAX, Creating REST API using PHP JQuery: Working with jQuery, Using plugins in jQuery and Creating Image slider, Generating charts from data using 3rd Party Libs	06	10%	CO3

Suggested Distribution of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyse	Evaluate	Create
Weightage	**20**	**30**	**30**	**20**	**0**	**0**

NOTE: This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Suggested List of Experiments/Tutorials

Sr. No.	Name of Experiment/Tutorial	Teaching Hours
1	Design a home page which will display your information e.g. resume	02
2	Demonstrate various list type using appropriate example	02
3	Demonstrate an image map using map of India in HTML. Once we click on specific state, it will open another page with state image.	02
4	Design the web pages that demonstrate Font properties, Background Properties, and Box shadow, Margin, Padding and outline properties.	02
5	Write a code for which create a symbol of Olympic	04
6	Demonstrate Table and Column Properties	04
7	Write a java script that takes an integer value and display the number with its digits in reversed order.	04
8	Write a javascript that read a set of N single digits and convert them in to single decimal integer. For example, the script should be convert the set of 6 digits {9,8,7,6,5,4} to decimal integer 987654.	02
9	Write a JavaScript to display the current date, current time and display the appropriate greeting message according to time slot.(e.g. Evening, 25/6/2023 08:15:00 PM)	04

10	Design the web page to demonstrate the validation of following fields. Write a JavaScript to validate each field as per its valid format and given validation criteria.: IP address, Alphanumeric values only, Special symbol restriction, Email must be in proper form, Required field validation, Password and retype password must be same	04

Major Equipment/ Instruments and Software Required

Sr. No.	Name of Major Equipment/ Instruments and Software
1	Notepad
2	Visual Studio
3	Xampp server

Suggested Learning Websites

Sr. No.	Name of Website
1	https://www.geeksforgeeks.org/web-technology
2	https://www.google.co.in/books/edition/Web_Technology/BmDW8qqOl5EC?hl=en&gbpv=0
3	https://www.safalta.com/careers/what-is-web-technology-with-examples
4	https://www.google.co.in/books/edition/Web_Technology_Design/nKjLYPCVxGIC?hl=en&gbpv=0

Reference Books

Sr. No.	Name of Reference Books
1	Beginning Web Programming with Html, XHtmal and CSS, Wiley by Jon Duckett
2	Html 5 Blackk Book: Covers Css3, Javascript, Xml, Xhtml, Ajax, PHP, and Jquery, by Kogent Learning Solutions Inc.
3	Internet and World Wide Web: How to Program by Harvey M. Deitel, Paul J. Deitel, Tem R. Nieto - Pearson