

Name of Faculty	:	Faculty of Computer Science & Applications
Name of Program	:	Master of Computer Application (MCA)
Course Code	:	1MCA03
Course Title	:	Web Frameworks
Type of Course	:	Professional core
Year of Introduction	:	2023-24

Prerequisite	:	Programming Languages, statistics and mathematics, Graph and most importantly zeal to learn
Course Objective	1	To understand basics of Cryptography and Network Security.
	2	To be able to secure a message over insecure channel by various means.
	3	To learn about how to maintain the Confidentiality.
	4	To understand various protocols for network security to protect against the threats in the networks
Course Outcomes	:	After learning the course the students will be able to:
	CO1	Provide security of the data over the network.
	CO2	Do research in the emerging areas of cryptography and network security.
	CO3	Implement various networking protocols.
	CO4	Protect any network from the threats in the world.

Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
L	T	P		Theory Marks		Practical Marks		Total Marks
SEE	CIA	SEE	CIA					
2	0	4	4	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 to the Internet: The World Wide Web, Web Browsers, Web Servers, Uniform Resource Locators, Multipurpose Internet Mail Extensions, Hypertext Transfer Protocol. Common Gateway Interface (CGI), Content Management System - Basics Case Study: Apache Server, WordPress	07	20%	CO1

2	Introduction to HTML/XHTML: Origins and Evolution of HTML and XHTML, Basic Syntax of HTML, Standard HTML Document Structure, Basic Text Markup, Images, Hypertext Links, Lists, Tables, Forms, HTML5, Syntactic Differences between HTML and XHTML	07	20%	CO2 CO5
3	Introduction to JavaScript: The Basics of JavaScript: Overview of JavaScript, Object Orientation and JavaScript, General Syntactic Characteristics- Primitives, Operations, and Expressions, Screen Output and Keyboard Input, Control Statements, Object Creation and Modification, Arrays, Functions. Callback Functions, Java Script HTML DOM.	07	20%	CO1 CO4
4	Introduction to Styles sheets and Frameworks: Cascading Style Sheets: Levels of Style Sheets – Style Specification Formats, Selector Forms, Property-Value Forms, Font Properties, List Properties, Alignment of Text, Color, The Box Model, Background Images, The span and div Tags. Frameworks: Overview and Basics of Responsive CSS Frameworks – Bootstrap	08	20%	CO3
5	Introduction to Data Interchange Formats: XML: The Syntax of XML, XML Document Structure, Namespaces, XML Schemas, Displaying Raw XML Documents, Displaying XML Documents with CSS, XSLT Style Sheets, XML Applications. JSON(Basics Only): Overview, Syntax, Datatypes, Objects, Schema, Comparison with XML.	07	20%	CO4

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 the following static web pages required for an online book store web site. 1) HOME PAGE: The static home page must contain three frames. 2) LOGIN PAGE 3) CATALOGUE PAGE: The catalogue page should contain the details of all the books available in the web site in a table. 4) REGISTRATION PAGE	01

2	<p>Write JavaScript to validate the following fields of the Registration page.</p> <ol style="list-style-type: none"> 1. First Name (Name should contains alphabets and the length should not be less than 6 characters). 2. Password (Password should not be less than 6 characters length). 3. E-mail id (should not contain any invalid and must follow the standard pattern name@domain.com) 4. Mobile Number (Phone number should contain 10 digits only). 5. Last Name and Address (should not be Empty). 	01
3	Develop and demonstrate the usage of inline, internal and external style sheet using CSS	02
4	<p>Develop and demonstrate JavaScript with POP-UP boxes and functions for the following problems:</p> <ol style="list-style-type: none"> a) Input: Click on Display Date button using onclick() function Output: Display date in the textbox b) Input: A number n obtained using prompt Output: Factorial of n number using alert c) Input: A number n obtained using prompt Output: A multiplication table of numbers from 1 to 10 of n using alert d) Input: A number n obtained using prompt and add another number using confirm Output: Sum of the entire n numbers using alert 	02
5	Write an HTML page that contains a selection box with a list of 5 countries. When the user selects a country, its capital should be printed next in the list. Add CSS to customize the properties of the font of the capital (color,bold and font size).	01
6	Write an HTML page that contains a selection box with a list of 5 countries. When the user selects a country, its capital should be printed next in the list. Add CSS to customize the properties of the font of the capital (color,bold and font size).	01
7	Write an HTML page including any required JavaScript that takes a number from text field in the range of 0 to 999 and shows it in words. It should not accept four and above digits, alphabets and special characters.	01
8	<p>Write JavaScript to validate the following fields of the above registration page.</p> <ol style="list-style-type: none"> 1. Name (Name should contains alphabets and the length should not be less than 6 characters). 2. Password (Password should not be less than 6 characters length). 3. E-mail id (should not contain any invalid and must follow the standard pattern (name@domain.com) 4. Phone number (Phone number should contain 10 digits only). 	01
9	<p>Write an XML file which will display the Book information which includes the following:</p> <ol style="list-style-type: none"> 1) Title of the book 2) Author Name 3) ISBN number 4) Publisher name 	01

	5) Edition 6) Price 9) Write a Document Type Definition (DTD) to validate the above XML file. 10) Display the XML file as follows. The contents should be displayed in a table. The header of the table should be in color GREY. And the Author names column should be displayed in one color and should be capitalized and in bold. Use your own colors for remaining columns. Use XML schemas XSL and CSS for the above purpose.	
10	Assume four users user1, user2, user3 and user4 having the passwords, pwd2,pwd3 and pwd4 respectively. Write a servlet for doing the following. Create a Cookie and add these four user id's and passwords to this Cookie	01

Major Equipment/ Instruments and Software Required

Sr. No.	Name of Major Equipment/ Instruments and Software
1	A working computer system with either Windows or Linux
2	A web browser either IE or firefox
3	Tomcat web server and Apache web server
4	XML editor like Altova Xml-spy [www.Altova.com/XMLSpy - free] , Stylusstudio , etc.,
5	A database either Mysql or Oracle
6	JVM(Java virtual machine) must be installed on your system

Suggested Learning Websites

Sr. No.	Name of Website
1	https://www.javatpoint.com/html-tutorial
2	https://www.guru99.com/what-is-dbms.html
3	https://www.w3schools.com/html/

Reference Books

Sr. No.	Name of Reference Books
1	Web Applications : Concepts and Real World Design, Knuckles, Wiley-India
2	P. J. Deitel, H.M. Deitel, Internet &World Wide Web How To Program, 4/e, Pearson International Edition 2010.
3	Robert W Sebesta, Programming the World Wide Web, 7/e, Pearson Education Inc., 2014.