


Government of Karnataka
Department of Technical Education
Bengaluru

	Course Title: Web Programming		
	Scheme (L:T:P) : 4:0:0	Total Contact Hours: 52	Course Code: 15CS52T
	Type of Course: Lectures, Self Study & Student Activity.	Credit : 04	Core/ Elective: Core
CIE- 25 Marks		SEE- 100 Marks	

Prerequisites:

Knowledge of HTML and CSS.

Course Objectives

To study the concepts of web application development such as XHTML, XML, PHP, Java web software, and Database access through JDBC and PHP.

Course Outcome

On successful completion of the course, the students will be able to attain below Course Outcome (CO):

Course outcome		CL	Linked PO	Teaching Hours
CO1	Discuss the fundamentals of web and concept of XHTML.	R,U,A	1,2,3,6,7,8,9,10	06
CO2	Describe different concepts of JavaScript and XHTML documents and Construct dynamic documents with JavaScript.	U,A	1,2,3,6,7,8,9,10	12
CO3	Describe XML using the user defined tags, DTD, Namespaces and Schemas with simple programs.	R,U,A	1,2,3,6,7,8,9,10	08
CO4	Discuss the concepts of PHP with associated programs	R,U,A	1,2,3,6,7,8,9,10	10
CO5	Discuss different ways to access the database through the web using examples.	U,A	1,2,3,6,7,8,9,10	06
CO6	Discuss various server based software using different technologies.	U,A	1,2,3,6,7,8,9,10	10
Total				52

Legends: R = Remember U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

Course-PO Attainment Matrix

Course	Programme Outcomes									
	1	2	3	4	5	6	7	8	9	10
Web Programming	3	3	3	-	-	3	3	3	3	3

Level 3- Highly Addressed, Level 2-Moderately Addressed, Level 1-Low Addressed.
 Method is to relate the level of PO with the number of hours devoted to the COs which address the given PO.
 If $\geq 40\%$ of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 3
 If 25 to 40% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 2
 If 5 to 25% of classroom sessions addressing a particular PO, it is considered that PO is addressed at Level 1
 If $< 5\%$ of classroom sessions addressing a particular PO, it is considered that PO is considered not-addressed.

Course Content and Blue Print of Marks for SEE

Unit No	Unit Name	Hour	Questions to be set for SEE			Marks Weightage	Marks Weightage (%)
			R	U	A		
I	Fundamentals and Introduction to XHTML	06	05	05	05	15	10.35
II	Java Script and XHTML Documents and Dynamic documents with JavaScript	12	-	20	15	35	24.13
III	Introduction to XML	08	05	10	05	20	13.79
IV	Introduction to PHP	10	05	15	10	30	20.69
V	Database Access through Web	06	-	05	10	15	10.35
VI	Java Web Software	10	-	15	15	30	20.69
Total		52	15	70	60	145	100

UNIT I : Fundamentals and Introduction to XHTML

06 Hrs

Fundamentals – A brief introduction to Internet, Origins, What the Internet Is, Internet Protocol Addresses, Domain Names, The World Wide Web, Origins, Web or Internet, Web browsers, Web servers, Web Server Operations, General Server Characteristics, Apache, IIS, Uniform Resource Locators, URL Formats, URL Paths, Multipurpose Internet Mail Extensions, Type Specification, Experimental Documental Types, Hypertext Transfer Protocol, The Request Phase, The Response Phase, Security, The web Programmers Toolbox
Introduction to XHTML: Syntactic differences between HTML and XHTML

UNIT II: JavaScript and XHTML documents and Dynamic documents with JavaScript

12 Hrs

JavaScript and XHTML documents – The JavaScript Execution Environment, The Document Object Model, Element Access in JavaScript, Events & Event Handling, Basic Concepts of Event handling, Events, Attributes & Tags, Handling Events from Body Elements, Handling Events from Button Elements, Handling Events from Textbox & password Elements, The Focus Event, Validating from Input, The DOM2 Event Model, Event Propagation, Event handler registration, An Example of the DOM2 Event Model, The Navigator Object, DOM Tree Traversal and Modification, DOM Tree Traversal, DOM Tree Modification.

Dynamic documents with JavaScript: Introduction, Positioning Elements, Absolute Positioning, Relative Positioning, Static Positioning, Moving Elements, Element Visibility, Changing Colors & Fonts, Changing Colors, Changing Fonts, Dynamic Contents, Stacking Elements, Locating the Mouse Cursor, Reacting to the Mouse Click, Slow Movement of Elements, Dragging & Dropping Elements.

UNIT III: Introduction to XML

08 Hrs

Introduction, The Syntax of XML, XML Document Structure, Document Type Definitions, Declaring Elements, Declaring Attributes, Declaring Entities, A Sample DTD, Internal & External DTDs, Namespaces, XML Schema, Schemas Fundamentals, Defining the Schema, Defining the Schema Instances, An Overview of Data types, Simple Types, Complex Types, Displaying Raw XML Documents, Displaying XML Documents with CSS.

UNIT IV: Introduction to PHP

10 Hrs

Introduction to PHP: Origins and Uses of PHP, Overview of PHP, General Syntactic Characteristics, Primitives, Operations and Expressions, Variables, Integer Type, Double Type, String Type, Boolean Type, Arithmetic Operations & Expressions, String Operations, Scalar Type conversions, Output, Control statements, Relational Operators, Boolean Operators, Selection Statements, Loop statements, An Example, Arrays, Array Creation, Accessing array Elements, Functions for Dealing with Arrays, Sequential Access to Array Elements, Sorting Arrays, Functions, General Characteristics of Functions, Parameters, The scope of Variables, The Lifetime of Variables, Pattern Matching, Form Handling, Files, Opening and Closing Files, Reading from a File, Writing to a File, Locking Files, Cookies, Introduction to Cookies, PHP Support for Cookies, Session Tracking.

UNIT V: Database access through the Web

06 Hrs

Database Access with PHP & MySQL, Potential Problems with Special Characters, Connecting to MySQL & Selecting the Database, Requesting MySQL Operations, A PHP/MySQL Examples, Database Access with JDBC & MySQL, JDBC & MySQL, Metadata, Examples.

UNIT V: Java Web Software

10 Hrs

Introduction to Servlets, Overview, Details, Servlet Containers, The NetBeans IDE, Storing information on Clients, Cookies, Servlet support for Cookies, Examples, JavaServer Pages(JSP), Motivation for JSP, JSP Documents, The Expression Language, The JSTL control action elements, JavaBeans, Model-View-Controller Application Architecture, JavaServer Faces, The tag libraries, JSF event handling, An example application.

Text books

1. Programming the World Wide Web, 7th edition, Robert W. Sebesta, Pearson Education, ISBN- 9789332518827

References

1. <http://www.tutorialspoint.com/>
2. <http://www.w3schools.com/>
3. Web Programming – Building Internet Applications, 3rd edition, Chris Bates, Wiley publisher

4. Web Technologies— HTML,JavaScript,PHP,java,JSP,ASP.Net,XML & Ajax – Black Book, Wiley, ISBN : 978-81-7722-997-4
5. PHP A Beginner's Guide --- Vikram Vaswami , TMH publishers. ISBN: 13:978-0-07-014069-1

Suggested list of student activities

Note: the following activities or similar activities for assessing CIE (IA) for 5 marks (Any one)

Student activity like mini-project, surveys, quizzes, etc. should be done in group of 3-5 students.

1. Each student should do any one of the following type activity or any other similar activity related to the course and before conduction, get it approved from concerned course coordinator and programme coordinator.
2. Each student should conduct different activity and no repeating should occur

1	Prepare a simple website using NetBeans IDE.
2	Demonstration of PHP program which includes database access.
3	Create a simple webpage using JSON.
4	Quiz

Course Delivery

The course will be delivered through lectures and Power point presentations/ Video

Course Assessment and Evaluation Scheme

Method	What		To whom	When/Where (Frequency in the course)	Max Marks	Evidence collected	Course outcomes
Direct Assessment	CIE	IA	Students	Three IA tests (Average of three tests will be computed)	20	Blue books	1 to 6
				Student activities	05	Report	1 to 6
				Total	25		
	SEE	End Exam		End of the course	100	Answer scripts at BTE	1 to 6
Indirect Assessment	Course Survey		Students	Middle of the course		Feedback forms	1, 2, 3 Delivery of course
				End of the course		Questionnaires	1 to 6 Effectiveness of Delivery of instructions & Assessment Methods

Note: I.A. test shall be conducted for 20 marks. Average marks of three tests shall be rounded off to the next higher digit.

Questions for CIE and SEE will be designed to evaluate the various educational components (Bloom's taxonomy) such as:

Sl. No	Bloom's Category	%
1	Remembrance	10
2	Understanding	50
3	Application	40

Note to IA verifier: The following documents to be verified by CIE verifier at the end of semester

1. Blue books (20 marks)
2. Student suggested activities report for 5 marks
3. Student feedback on course regarding Effectiveness of Delivery of instructions & Assessment Methods.

FORMAT OF IA TEST QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks			
Ex: I test/6 th week of sem 10-11 AM	V SEM		20			
	Year:					
Name of Course coordinator :			Units: __			
CO's: _____						
Question no	Question	MARKS	CL	CO	PO	
1						
2						
3						
4						

Note: Internal choice may be given in each CO at the same cognitive level (CL).

MODEL QUESTION PAPER (CIE)

Test/Date and Time	Semester/year	Course/Course Code	Max Marks			
Ex: I test/6 th week of sem 10-11 AM	V SEM	Web Programming	20			
	Year: 2017-18	Course code: 15CS52T				
Name of Course coordinator :			Units:1,2 COs: 1,2			
Note: Answer all questions						
Question no	Question	CL	CO	PO		
1	Explain the operation of web server. (5) OR Explain MIME with its type specification. (5)	U	1	1,2,3,6,7,8,9,10		
2	Explain how to handle the focus event with an example (5) OR Illustrate Moving elements with simple example. (5)	A	2	1,2,3,6,7,8,9,10		
3	Illustrate the HTTP protocol's request and response phases with an example for each. (10)	A	1	1,2,3,6,7,8,9,10		

Format for Student Activity Assessment

DIMENSION	Unsatisfactory 1	Developing 2	Satisfactory 3	Good 4	Exemplary 5	Score
Collection of data	Does not collect any information relating to the topic	Collects very limited information; some relate to the topic	Collects some basic information; refer to the topic	Collects relevant information; concerned to the topic	Collects a great deal of information; all refer to the topic	3
Fulfill team's roles & duties	Does not perform any duties assigned to the team role	Performs very little duties	Performs nearly all duties	Performs all duties	Performs all duties of assigned team roles with presentation	4
Shares work equally	Always relies on others to do the work	Rarely does the assigned work; often needs reminding	Usually does the assigned work; rarely needs reminding	Does the assigned job without having to be reminded.	Always does the assigned work without having to be reminded and on given time frame	3
Listen to other Team mates	Is always talking; never allows anyone else to speak	Usually does most of the talking; rarely allows others to speak	Listens, but sometimes talk too much	Listens and contributes to the relevant topic	Listens and contributes precisely to the relevant topic and exhibit leadership qualities	3
TOTAL						13/4=3.25=4

Note: This is only an example. Appropriate rubrics/criteria may be devised by the concerned course co-ordinator for assessing the given activity.

Diploma in Computer Science & Engineering
V- Semester
Course Title: Web Programming

Time: **3 Hours**Max Marks: **100**

PART-A

Answer any SIX questions. Each carries 5 marks.**5X6=30 Marks**

1. Define Web Browser, Web Server, Event, Event Handling and Internet.
2. Describe the parameters and actions of the setTimeout and setInterval functions.
3. Define DTD. Mention four possible keywords in DTD declaration.
4. Explain four scalar types of PHP.
5. Explain built-in string manipulation functions.
6. Explain potential problems associated with special characters.
7. Construct a PHP script to insert records through form into a database.
8. Write a note on JavaBeans.
9. Explain JSF event handling.

PART-B

Answer any SEVEN full questions each carries 10 marks.**10X7=70 Marks**

1. Illustrate the HTTP protocol's request and response phases with an example for each.
2. Illustrate with an example for dynamic stacking of images
3. Explain declaring of elements, attributes and entities in DTD with an example.
4. Explain different XSD indicators.
5. Explain how to create indexed and associated array with an example.
6. Write a PHP script to illustrate sort, assort and ksort functions.
7. Write a PHP script to insert record into the table and retrieve records from the table.
Assume a table "my_detail" is already created with fields name, city, phone_no and mail_id.
8. Explain the steps involved in accessing MySQL database through JDBC.
9. Explain life cycle of a Servlet.
10. Explain steps in JDBC.



MODEL QUESTION BANK**Diploma in Computer Science & Engineering****V Semester****Course Title: Web Programming**

CO	Question	CL	Marks
I	Define Web Browser, Web Server, Event, Event Handling and Internet	R	05
	Explain domain names with an example.	U	
	Explain the operation of web server.	U	
	Illustrate the general server characteristics.	U	
	Explain the file structure of web server.	U	
	Define MIME, Web security, URL	R	
	Discuss URL format with its different paths.	U	
	Explain MIME with its type specification	U	
	Illustrate the HTTP protocol's request and response phases	U	
	Discuss web security issues.	U	
	Mention the differences between html and xhtml.	U	
	Explain the HTTP protocol's request and response phases with an example for each.	A	10
	Explain the operation of Web Server with its file structure.	U	
II	Explain the structure of DOM.	U	05
	List DOM node properties	U	
	Describe the parameters and actions of the setTimeout and setInterval functions.	U	
	Illustrate Moving elements with simple example.	A	
	Explain Element visibility with simple example	A	
	Explain how to locate the mouse cursor.	U	10
	Explain different types of positioning with an example	U	
	Illustrate with an example for dynamic stacking of images	A	
	Explain with an example how to change dynamically background and foreground Colors of the document.	A	
	Illustrate moving elements and element visibility with an example.	A	
	Discuss the two ways to register an event handler in DOM-0 event model.	A	
	Explain the 3 phases of event processing in the DOM-2 event model	A	
	Illustrate how to handle blur event and change event with an example	A	
Explain how to handle the focus event with an example	A		
	Write a note on XML.	U	05
	List the features of XML	U	
	Write a note on XML document structure.	U	
	Define DTD. Mention four possible keywords in DTD declaration.	R	
	Define XML schema. List the advantage of XML schema over DTD.	R	
	Differentiate between simple type and complex type XML elements.	U	
	Explain Internal and External DTD's with an example.	U	

III	Illustrate declaring of elements, attributes and entities in DTD with an example.	A	10	
	Explain different XSD indicators.	A		
	Explain how to declare namespace with example.	A		
	Explain schema and schema instance with an example.	A		
	Explain how to create simple type and complex type element with an example.	A		
IV	Write a note on PHP.	U	5	
	Explain four scalar types of PHP.	U		
	Explain built-in string manipulation functions.	U		
	Explain Implicit and Explicit type conversions.	U		
	Write PHP script to compute the sum of positive integers upto 30 using do-while statement.	A		
	Write PHP script to compute factorial of 'n' using while or for loop construct.	U		
	Explain the syntax of for-each statement with an example.	A		
	Write a PHP script to sort an array of elements.	A		
	Explain how cookies are extracted using PHP.	U		
	Write a note on session tracking.	U		
	Explain preg_match() and preg_split() functions with example.	U		
	Construct a PHP script to compute the squareRoot, Square, Cube and Quad of 10 numbers.	A		10
	Explain how to create indexed and associated array with an example.	U		
Write a PHP script to illustrate sort, assort and ksort functions.	A			
Write a note on PHP and its scalar types.	U			
Explain types of arrays with an example in PHP.	A			
V	Explain potential problems associated with special characters.	U	05	
	Write PHP functions used to connect to MYSQL database and selecting a database	U		
	Construct a PHP script to insert records through form into a database.	A		
	Construct a PHP script to retrieve records from the database table.	A		
	Discuss how the collection of metadata extracted from a database.	U		
	Explain the use of mysql_query() method used to execute SQL queries with its syntax.	U		
	Write a PHP script to create a table, insert records into the table, retrieve records from the table. Assume database "Student" and table "cs_student" with fields name, sem, regno, address	A	10	
	Write a PHP script to insert record into the table and retrieve records from the tabl. Assume a table "my_detail" is already created with fields name, city, phone_no and mail_id	A		
	Construct a PHP script to insert and retrieve records from the database table.	A		
	Illustrate the use of: Mysql_query(), mysql_connect(), mysql_select_db(), mysql_num_rows() and mysql_num_fields()	U		
	Explain the steps involved in accessing mySQL database through JDBC.	U		
	Write a note on Servlet Containers.	U		

VI	Explain doGet and doPost methods of the HttpServlet class.	U	05
	Write a note on Cookies.	U	
	List the five parts of JSTL.	U	
	Explain three elements associated with JSP.	U	
	Write a note on MVC application Architecture.	U	
	Explain the two standard tag libraries of JSF.	U	10
	Explain the different methods of Cookies with an example.	A	
	Explain the processing flow of JSP documents with a neat diagram.	U	
	Illustrate JSTL control action elements with an example for each.	A	

