WEB TECHNOLOGIES (CS504PC)
B.Tech. III Year I Sem
COURSE PLANNER

I. COURSE PURPOSE:

The focus in this **course** is on the World Wide **Web** as a platform for interactive applications, content publishing and social services. The **development** of **web**-based applications requires knowledge about the underlying **technology** and the formats and standards the **web** is based upon.

II. PRE-REQUISITES:

Fundamental programming skills to look for in a **web** developer training program include HTML, CSS and JavaScript (the basic building blocks of most websites). Hot programming skills for back-end **web** development positions include PHP, XML and SQL.

III. COURSE OBJECTIVIES:

1.To introduce PHP language for server-side scripting
2. To introduce XML and processing of XML Data with Java
3. To introduce Server-side programming with Java Servlets and JSP
4. To introduce Client-side scripting with Javascript and AJAX.

IV. COURSE COUCOMES:

S. No.	Course Outcomes	Bloom's Taxonomy Levels	PROGRAM OUTCOMES, PROGRAM SPECIFIC OUTCOMES
1	Gain knowledge of client-side scripting, validation of forms and AJAX programming	L1-Remembering, L2-Understanding, L5-Evaluating	PO1,PO6,PO9PO12, P O1-PSO3
2	Understand server-side scripting with PHP language	L3-Applying, L5-Evaluating	PO1PO6,PO9,PO12, PSO1-PSO3
3	Understand what is XML and how to parse and use XML Data with Java	L4-Analyzing, L5-Evaluating	PO1-PO6,PO9 PO12,PSO1-PSO3
4	To introduce Server-side programming with Java Servlets and JSP	L4-Analyzing, L6 Creating, L1 Remembering	PO1-PO6,PO9 PO12,PSO1-PSO3
5	Gain knowledge of client-side scripting, validation of forms and AJA programming	L6-Creating, L1-Knowledge and L3-Applying	PO1-PO6,PO9 PO12,PSO1-PSO3

V. COURSE CONTENT:

UNIT- I

Introduction to PHP: Declaring variables, data types, arrays, strings, operators, expressions, control structures, functions, Reading data from web form controls like text boxes, radio buttons, lists etc., Handling File Uploads. Connecting to database (MySQL as reference), executing simple queries, handling results, Handling sessions and cookies.File Handling in PHP: File operations like opening, closing, reading, writing, appending, deleting etc. on text and binary files, listing directories.

UNIT- II

HTML Common tags- List, Tables, images, forms, Frames; Cascading Style sheets; XML: Introduction to XML, Defining XML tags, their attributes and values, Document Type Definition, XML Schemes, Document Object Model, XHTML Parsing XML Data – DOM and SAX Parsers in java.

UNIT - III

Introduction to Servlets: Common Gateway Interface (CGt), Life cycle of a Servlet, deploying a servlet, The Servlet API, Reading Servlet parameters, Reading Initialization parameters Handling Http Request & Responses, Using Cookies and Sessions, connecting to a database using JDBC.

UNIT - IV

Introduction to JSP: The Anatomy of a JSP Page, JSP Processing, Declarations, Directives, Expressions, Code Snippets, implicit objects, Using Beans in JSP Pages, Using Cookies and session for session tracking, connecting to database in JSP.

UNIT - V

Client-side Scripting: Introduction to Javascript, Javascript language – declaring variables, scope of variables, functions. event handlers (onclick, onsubmit etc.), Document Object Model, Form Validation.

TEXT BOOK:

1. Web Technologies, Uttam K Roy, Oxford University Press
2. The Complete Reference PHP — Steven Holzner, Tata McGraw-Hill

REFERENCE BOOKS:

R1. Web Programming, building internet applications, Chris Bates 2″ edition, Wiley Dreamtech
R2. Java Server Pages —Hans Bergsten, SPD O'Reilly,
R3. Java Script, D.Flanagan
R4. Beginning Web Programming-Jon Duckett WROX.
R5. Programming world wide web, R.W.Sebesta, Fourth Edition, Pearson.
R6. Internet and World Wide Web — How to program. Dietel and Nieto, Pearson.

VI.LESSON PLAN:

S No	Week	Unit	Topic	Topics to be covered	Link for PPT	Link for PDF	Course Learning Outcomes	Teaching Methodology	References
1	1	I	wt objective, course outcomes, OBE		https://drive.google.com/drive/folders/1GQ-EYrAE7IrLIJMRJ0enH58SDgM5-2mZ?usp=sharing	https://drive.google.com/drive/folders/1GQ-EYrAE7IrLIJMRJ0enH58SDgM5-2mZ?usp=sharing	understand the basic tags to create static pages understand the PHP concept	PPT, chalk and talk	TB1&TB2
2		II	wt objective, course outcomes, OBEUnit-II: HTML COMMON TAGS:List, tables, images	Introduction to HTML , Common tags in HTML, Internet Working,Create List tables and images in HTML with example					
3		II	forms, frames	Form and frames creation					
4	2	II	cascading style sheet	Meaning of CSS, importance					
5		I	Unit-1: Introduction to PHP, Declaring variables, data types	Importance of PHP ,Usage of variables and data types in PHP					
6		I	Arrays, strings, Operators, expressions	Creation of arrays and strings in PHP,Usage of Operators and expressions in PHP with example,					
7	3	I	Control structures, Functions	Implementation of various control structures ,Creation of functions with examples					
8		I	Reading data from web form controls like text boxes, radio buttons, lists etc.	Reading data from web form controls like text boxes, radio buttons, lists etc.					
9		I	Handling File Uploads and Connecting to database, Executing simple queries, handling results,	Handling File Uploads and Connecting to database					
10	4	I	Handling sessions and cookies	Executing simple queries, handling results, Handling sessions and cookies					
11		I	File operations like opening, closing, reading, writing, appending, deleting etc. on text and binary files, listing directories	Implementation of File operations like opening, closing, reading, writing, appending, deleting etc. on text and binary files,Applications of listing directories					

12		I	Mock test-1						
13	5	II	UNIT-II: Introduction to XML, Defining XML tags, Attributes and values	XML importance and usage, How to use,Syntax and elements	https://drive.google.com/drive/folders/1GQ-EYrAE7IrLIJMRJ0enH58SDgM5-2mZ?usp=sharing	https://drive.google.com/drive/folders/1GQ-EYrAE7IrLIJMRJ0enH58SDgM5-2mZ?usp=sharing	Analyse the structure of XML,DOM	PPT, chalk and talk	TB1&TB2
14		II	Document Type Definition, XML Schemas	Usage of DTD and XML schemas					
15		II	Document Object Model, XHTML	What is DOM , THE HTML DOM,What is XHTML used for?					
16	6	II	DOM and SAX Parsers in java	What is sax and how does it related to XML?					
17		III	Common Gateway Interface (CGI), Lifecycle of a Servlet	Introduction to Java Servlets and applications,Introduction to CGI and examples,Illustration of life cycle of servlets, Explanation with the help of an example	https://drive.google.com/drive/folders/1GQ-EYrAE7IrLIJMRJ0enH58SDgM5-2mZ?usp=sharing	https://drive.google.com/drive/folders/1GQ-EYrAE7IrLIJMRJ0enH58SDgM5-2mZ?usp=sharing	understand the functioning of servlets , JSP and how to handle HTTP request and response	PPT, chalk and talk	TB1&TB2
18		III	deploying a servlet	Demonstration of a servlet					
19	7	III	The Servlet API	Concepts of Servlet API,					
20		III	The Servlet API	Demonstrate reading servlet parameter.					
21		III	Reading Servlet parameters	A program to show initializing parameters					
22	8	III	Reading Initialization parameters	HTTP Protocols for Servlets					
23		III	Handling HTTP Request and Responses	Demonstration for Handling HTTP Request and Responses					
24		III	Using Cookies and Sessions	JDBC connectivity					
25	9	III	Connecting to a database using JDBC.	Example to demonstrate connecting to a database using JDBC.					
26		III	The Anatomy of a JSP Page	Elements of JSP page,Explanation of directive, action, and scripting					
27		IV	JSP Processing, Declarations	How do you process a JSP request?,JSP architecture with diagram					

28	10	IV	Directives, Expressions	page directive. include directive. taglib directive.Examples of Directives,Examples of Directives	https://drive.google.com/drive/folders/1GQ-EYrAE7IrLIJMRJ0enH58SDgM5-2mZ?usp=sharing	https://drive.google.com/drive/folders/1GQ-EYrAE7IrLIJMRJ0enH58SDgM5-2mZ?usp=sharing	Define beans understand cookies and sessions	PPT, chalk and talk	TB1&TB2
29		IV	Code Snippets, implicit objects	a code sample that shows you how to add WebSphere Commerce functionality to the store.,Code for implicit objects					
30		IV	Using Beans in JSP Pages	Introduction and importance					
31	11	IV	Using Cookies and session for session tracking	An example to understand using Cookies and session for session tracking					
32		IV	connecting to database in JSP	A demonstration					
33		V	Introduction to JavaScript: JavaScript language	Java and Java Script,Server side Java Script vs Client Side Java Script,Features and First Program					
34	12	V	Declaring variables, Scope of variables, functions	Variable declaration and initialization,An example to illustrate scope of variables,How to make functions in JAVA scripts and type	https://drive.google.com/drive/folders/1GQ-EYrAE7IrLIJMRJ0enH58SDgM5-2mZ?usp=sharing	https://drive.google.com/drive/folders/1GQ-EYrAE7IrLIJMRJ0enH58SDgM5-2mZ?usp=sharing			
35		V	Event handlers (onclick, on submit etc.)	Demo			understand form validation	PPT, chalk and talk	TB1&TB2
36		V	Document Object Model	Importance of DOM					
37		V	Form validation	A program to show form validation					

TEXT BOOK:

3. Web Technologies, Uttam K Roy, Oxford University Press
4. The Complete Reference PHP — Steven Holzner, Tata McGraw-Hill

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R6. Internet and World Wide Web — How to program. Dietel and Nieto, Pearson.

VI. HOW PROGRAM OUTCOMES ARE ASSESSED:

Program Outcomes (PO)		Level	Proficiency assessed by
PO1	**gineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems related to Computer Science and Engineering.	2.5	Lectures, Assignments, Exams
PO2	**Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems related to Computer Science and Engineering and reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	1.5	Lectures, Assignments, Exams
PO3	**Design/development of solutions**: Design solutions for complex engineering problems related to Computer Science and Engineering and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	3	Lectures, Assignments, Exams
PO4	**Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	1.5	Lectures, Assignments, Exams
PO5	**Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	2.5	Lectures, Assignments, Exams
PO6	**The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the Computer Science and Engineering professional engineering practice.	1	Lectures, Assignments, Exams
PO7	**Environment and sustainability**: Understand the impact of the Computer Science and Engineering professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.	-	
PO8	**Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.	-	
PO9	**Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	1.5	Lectures, Assignments, Exams

Program Outcomes (PO)		Level	Proficiency assessed by
PO10	**Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	2.0	Lectures, Assignments, Exams
PO11	**Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	1.5	Lectures, Assignments, Exams
PO12	**Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	2.5	Lectures, Assignments, Exams

VIII .HOW PROGRAM SPECIFIC OUTCOMES ARE ASSESSED:

Program Specific Outcomes (PSO)		Level	Proficiency assessed by
PSO1	**Foundation of mathematical concepts:** To use mathematical methodologies to crack problem using suitable mathematical analysis, data structure and suitable algorithm.	2.5	Lectures, Assignments, Exams
PSO2	**Foundation of Computer System:** The ability to interpret the fundamental concepts and methodology of computer systems. Students can understand the functionality of hardware and software aspects of computer systems.	3.0	Lectures, Assignments, Exams
PSO3	**Foundations of Software development:** The ability to grasp the software development lifecycle and methodologies of software systems. Possess competent skills and knowledge of software design process. Familiarity and practical proficiency with a broad area of programming concepts and provide new ideas and innovations towards research.	2.0	Lectures, Assignments, Exams

MAPPING COURSE OUTCOMES LEADING TO THE ACHIEVEMENT OFPROGRAM OUTCOMES AND PROGRAM SPECIFICOUTCOMES:

Course Outcomes	Program Outcomes												Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3	1	2	1	2	1	-	-	2	2	2	3	1	3	2
2	2	2	3	2	3	1	-	-	1	2	2	3	2	2	2
3	2	1	2	1	2	1	-	-	2	2	2	2	1	2	2
4	3	2	3	2	2	1	-	-	1	1	1	2	3	3	2
5	2	1	2	2	2	1	-	-	2	2	1	1	1	2	2
AVG	**2.4**	**1.4**	**2.5**	**1.6**	**2.5**	**1**	**-**	**-**	**1.6**	**1.8**	**1.6**	**2.2**	**1.6**	**2.4**	**2**

DESCRIPTIVE QUESTIONS

UNIT-1

Questions

QUESTIONS	Blooms taxonomy level	Course outcomes
Q1. Explain with an example program how to connect to a SQL Server database from a PHP script.	Understand	1
Q2. Write a PHP code to validate the form consisting of a username, password and email fields.	Understand	1
Q3. Write the structure of PHP script with an example.	Knowledge	1
Q4. Discuss different types of Conditional statements in PHP.	Knowledge	1
Q5. Write a PHP program to demonstrate the passing a variable by reference.	Analyze	1

UNIT-2

Questions

QUESTIONS	Blooms taxonomy level	Course outcomes
Q1. Which HTTP method is non-idempotent?	Understanding	2
Q2. Explain difference between GET and POST method?	Knowledge	2
Q3. List out MIME Types?	Understand	2
Q4. List the differences between Client side JavaScript Server side JavaScript?	Analyze	2
Q5. Define how to create a Date Object?	Understand	2

UNIT-3

Questions

QUESTIONS	Blooms taxonomy level	Course outcomes
Q1. Discuss the web application and its directory structure.	Understand	3
Q2. list and briefly explain the methods defined in the HttpServletRequest.	Knowledge	3
Q3. list and explain different types of JDBC drivers.	Analysis	3
Q4. Build a servlet program to illustrate parameter reading and initialization parameters.	Knowledge	3

Q5. List out the difference between web server and application server.	Understand	3

UNIT-4
Questions

QUESTIONS	Blooms taxonomy level	Course outcomes
1.Explain about JSP	Knowledge	4
2.Explain briefly about data base connectivity by using JSP	Knowledge	4
3.Explain about cookies and sessions	Knowledge	4
4.Briefly explain about session tracking in JSP	Understand	4
5.Explain about API,with an example program	Understand	4

UNIT-5
Questions

QUESTIONS	Blooms taxonomy level	Course outcomes
1.Explain about simple AJAX application	Knowledge	5
2.Explain about form validation	Understand	5
3.Eplainbriefly aboy DOM and SAX in javascript	Analysis	5
4.Explain about client side programming using JAVA script with simple example	Understand	5
5.Explain about event handling	Understand	5

Fill in the blanks:

1) Function used to create an array is _____
2) Function used to create a session is _____
3) Function used to create cookie is ____
4) Function used to start session is _____
5) Function used to start session is _____
6) Explain about a file in php?
7) Brief various file modes.
8) Explain about inbuilt functions
9) Function used to destroy session is ____
10) Function used to set a cookie is _____
11) The _____method is called for each HTTP request.
12)_____ jar file contains the classes and interfaces that are needed to build servlets.
13) _____ is valuable for tracking user activities
14) JSP stands for _____.
15) JDBC stands for_____

1. *N*Web server that supports development of servlet and JSP is [ ]
   \)Apache (Jakarta) Tomcat B)Macromedia JRun Caucho ResinD)All

2. *N*hich of the following don't need to redeploy the application if the code is modified [ ]

A) JSP Servlet Both D) None

3. For writing any data to the buffer, JSP provides an implicit object named [ ]
A)response page session D) out

4. Which of the following is a JSP expression tag [ ]
A)<%! %> <%-- --%> <%= %>) <% %>

5. Which statement is used to execute parametric query [ ]
A)PreparedStatement CallableStatement C) Both) None

6. Which of the following driver type is JDBC-ODBC bridge [ ]
A) type2 type 1 type 3) type 4

7. Tag used in JSP bean development is [ ]
A) jsp:useBean B) jsp:setProperty jsp:getProperty D) All

8. Which method of servlet is called to process the HTTP request [ ]
A) init() B) service() destroy() D) All

9. To get the servlet environment information which of following object is used [ ]
A)ServletResponse ServletConfig ServletContext D)All

10.In which of following request parameters are included as part of the URL that is sent to the Web[ ]

A)HTTP POST B)HTTP GET C)Both D)None

WEBSITES:
1. W3schools.com

LIST OF TOPICS FOR STUDENT SEMINARS (Optional):
1. Application Programming Interface
2. Remote Method Invocation
3. Life cycle of Servlet
4. Client side Scripting Languages
5. Server Side scripting languages