CSE3002	Internet and Web Programming	L	T	P	J	C
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Pre-requisite	**CSE2004**	**Syllabus version**				
		1.1				

Course Objectives:

The objectives of this course are to:

1. To understand the basic concepts of web programming and internet.
2. To understand internet protocols.
3. To understand how the client-server model of Internet programming works.
4. Learn the use of scripting languages and appreciate their limitations.
5. To understand interactive web applications.

Expected Course Outcome:

After successfully completing the course the student should be able to:

1. Differentiate web protocols and web architecture.
2. Develop client side web application.
3. Develop applications using Java.
4. Implement client side script using Javascript.
5. Implement server side script using PHP, JSP and Servlets.
6. Develop XML based web applications.
7. Develop application using recent environment like Node JS, Angular JS, JSON and AJAX.

Student Learning Outcomes (SLO): 5,6,17

Module:1	**Introduction to Internet**	**2 hours**

Internet Overview- Networks - Web Protocols — Web Organization and Addressing - Web Browsers and Web Servers -Security and Vulnerability-Web System Architecture – URL - Domain Name – Client-side and server-side scripting.

Module:2	**Web Designing**	**3 hours**

HTML5 – Form elements, Input types and Media elements, CSS3 - Selectors, Box Model, Backgrounds and Borders, Text Effects, Animations, Multiple Column Layout, User Interface

Module:3	**Client-Side Processing and Scripting**	**5 hours**

JavaScript Introduction –Functions – Arrays – DOM, Built-in Objects, Regular Expression, Exceptions, Event handling, Validation.

Module:4	**Overview of Java**	**6 hours**

An overview of Java – Classes – Objects – Inheritance – Packages – Abstract classes – Interfaces and Inner classes – Exception handling – Multithreading – String handling – Streams and I/O – Applets.

Module:5	**Server-Side Processing Using Servlets**	**5 hours**

Java Servlet – Life cycle, Servlet interface, Types of Servlet, Servlet Config interface, Servlet Request, Servlet Response, HTTP Servlet Request, HTTP Servlet Response, Exceptions, Servlet Context, Sessions and Cookies, Database connectivity using JDBC.

Module:6	**Server-Side Processing Using Jsp**	**3 hours**

JSP – Directives – page, include, taglib Scripting elements – declaration, scriptlets,

expression, comments - Standard actions – Implicit objects		
Module:7	**PHP basics and XML**	**5 hours**
PHP Language basics – Database connectivity, File handling, File uploading, Cookies, e-mail. XML Basics – XML DTD, XML Schema		
Module:8	**Recent Trends In Internet Programming**	**1 hour**
	Total Lecture hours:	**30 hours**

Text Book(s)	
1.	Deitel Nieto, Internet & World Wide Web How to Program, 5th edition, 2012.
2.	Don Nguyen, Jump start Node JS, SPD Publishers, 2015.
3.	Shyam Seshadhri, Brad Green, Angular JS Up and Running, SPD publishers, 2014.
Reference Books	
1.	Herbert Schildt, "Java-The Complete Reference", Eighth Edition, McGraw Hill Professional, 2011
2.	Hans Bergstaen, Java Server Pages, 2nd Edition, O'Reilly, 2002
Mode of Evaluation: CAT / Assignment / Quiz / FAT / Project / Seminar	

List of Challenging Experiments (Indicative)		
	1. HTML basic tags, HTML forms, table, list, HTML frames Q: Analyse the existing IRCTC website and improve the website using HTML controls. 2. Image mapping using HTML Q: Consider an image of India with different states. Use image mapping to give the demographics of all the states from data.gov.in. 3. CSS – internal, external and inline Q: Apply CSS to a shopping site having two branches with different localized content, the website being hosted on a local LAMP server. 4. JavaScript validation Q: Design a flight reservation form and perform validation of the fields with auditory feedback for the visually impaired. 5. Java inheritance (hybrid), interface Q: Find the batting and bowling rate of player in one day matches and test matches. 6. Package Q: Develop an edge detection package for images using Java. Demonstrate the use of the package on dental images.	**30 hours**

	7. Java multi threading Q: Design a web page with three frames. Render image, animation and text in three frames respectively using Java. 8. Exception handling Q: Perform editing of document while the background grammar and spell checker works to add all the green and red squiggle underlines and throwing suggestions as exceptions. 9. Java applets Q: Design a website to continuously scroll updated NEWS in a window in Java. 10. Servlet –session and cookies Q: Develop a torrent like application where the central machine collects and collates five different parts of a file in a proper order. 11. JSP standard actions Q: Use an ATM PIN verification bean integrated with an online SMS API. Use the bean to send the ATM PIN to your mobile for authentication into the banking application. 12. ,13. PHP database connectivity, PHP file handling Q: Implement PageRank algorithm using PHP 14. PHP e-mail Q: Develop an application to convert a word file to PDF and send it as an attachment through e-mail. The service is to be restricted to a file of size 10MB. 15. XML – Schema Q: Develop a thesaurus tool by creating a schema for thesaurus. When a word is entered the synonyms or antonyms must be displayed based on the user request.	
	Project	**60** [Non Contact hrs]
	Projects may be given as group projects The following are sample tasks that can be given to students to be implemented using appropriate tools (web server and IDE). 1. Develop an application that collates topic based NEWS feeds on a common window. 2. A portal to manage CAL projects of students. 3. Create a portal for conducting opinion polls with appropriate visual display of results. 4. Use a dataset from data.gov.in, perform analysis and visual reporting on the dataset. 5. Develop a complete alternative to an existing website. (e.g. www.vit.ac.in)	
	Total Laboratory Hours	**30 hours**

Mode of assessment: Project/Activity			
Recommended by Board of Studies	07.06.2019		
Approved by Academic Council	No. 55	Date	13.06.2019