CSE2015	Internet Programming and Web Technologies	L	T	P	J	C
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Pre-requisite	CSE2004	**Syllabus version**				
		1.0				

Course Objectives:

1. To comprehend and analyze the basic concepts of web programming and internet Protocols.
2. To describe how the client-server model of Internet programming works.
3. To demonstrates the uses of scripting languages and their limitations.

Course Outcome:

After successfully completing the course the student should be able to

1. Know the different web protocols and web architecture.
2. Apply HTML and CSS effectively to create dynamic websites.
3. Create event responsive webpages using AJAX and JQuery.
4. Implement server-side programming like session, cookies, file handling and database connectivity using PHP.
5. Learn web data storage and transfer technologies using Angular
6. Develop web applications using advanced technologies such as Node JS

Student Learning Outcomes (SLO): 2, 5, 6

Module:1	**Introduction to Internet**	**4 hours**

Internet Overview- Networks – WWW –Web Protocols — Web Organization and Addressing – Internet Service Providers, DNS Servers, Connection Types, Internet Addresses - Web Browsers and Web Servers -Security and Vulnerability-Web System Architecture – URL - Domain Name – Web Content Authoring - Webserver Administration – Search Engines

Module:2	**Client Side Scripting**	**8 hours**

HTML5 – Text tags; Graphics, Form elements, HTML 5 Input types, HTML 5 Input types, semantic tags, CSS3 - Selectors, Box Model, Backgrounds and Borders, Text Effects, Animations, Cascading and inheritance of style properties - Normal Flow Box Layout-Beyond the Normal Flow – Introduction to responsive design - bootstrap

Module:3	**Client Side Scripting**	**7 hours**

JavaScript -Variables and Data Types - Statements – Operators- Literals- Functions- Objects- Arrays- Built-in Objects, DOM – BOM - Regular Expression Exceptions, Event handling, Validation - JQuery

Module:4	**Developing Interactive Web Applications**	**5 hours**

AJAX –AJAX calls - XML http – request – response – AJAX with PHP - Data Formats - AJAX with Database – Processing Server Response - AJAX Security

Module:5	**Server Side Scripting**	**7 hours**

Introduction to Node.js- NPM - Events, Timers, and Callbacks in Node.js – file upload – email – Express framework – request –response –routing - templates- view engines. Introduction to Mongo DB- creating DB, collection – CRUD operations - Accessing MongoDB from Node.js. – Accessing online Mongo DB from Node JS.

Module:6	**React Web Framework**	**6 hours**

Introduction – Environment setup – JSX – React DOM – React Elements - Components – react state – Props – Hooks – Component life cycle

Module:7	**React Web Framework**	**6 hours**

React Router – event handlers - React lists – react forms – react HTML render – react refs – react CSS – Array immutability – Lazy loading – Storing to local storage – Create a sample React App

Module:8	**Recent Trends**			**2 hours**
	Total Lecture hours:			**45 hours**
Text Book(s)				
1.	Paul J. Deitel, Harvey Deitel, Internet and World Wide Web How To Program, 6th Edition, Pearson, 2020.			
2.	Vasan Subramanian, Pro MERN Stack - Full stack web app development, 2nd Edition, 2019			
Reference Books				
1.	Jessica Minnick, Responsive Web Design with HTML 5 & CSS, Cengage Learning, 2020.			
2.	Frank Zammetti, Modern Full-Stack Development: TypeScript, React, Node.js, 1st Edition, Apress,2020			
Mode of Evaluation: CAT / Assignment / Quiz / FAT / Project / Seminar				
List of Experiments (Indicative)				
1.	HTML form validation with JavaScript			3 hours
2.	PHP : Forms and File handling			3 hours
3	PHP : Session Management and Cookies, Databases			3 hours
4.	Custom Services in Applications using AJAX			3 hours
5.	Database and Server Response with AJAX			6 hours
6.	React : Content projection, Manipulating Data With Pipes			6 hours
7.	Node JS and Mongo DB			6 hours
			Total Laboratory Hours	**30 hours**
Mode of assessment: Project/Activity				
Recommended by Board of Studies	11-02-2021			
Approved by Academic Council	No. 61	Date	18-02-2021	