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| **Course Code: CSE-4004** | **Course Title: Web Technologies** | | **TPC** | **3** | **2** | **4** |
| **Version No.** | **1.0** | | | | | |
| **Course Pre-requisites/ Co-requisites/ anti-requisites (if any).** | Problem solving using JAVA  DBMS | | | | | |
| **Objectives:** | 1. Understand state-of-the-art in web technologies, architectures, and applications. 2. To get hands on experience on various web development tools and techniques. | | | | | |
| **Expected Outcome:** | 1. Independently understand basic concepts of web technology and markup languages, CSS 2. Designing static and dynamic web pages 3. Understand the MVC architecture. 4. Understand and explain the browser internals and cookies. 5. Various technologies like JavaScript, PHP, MySQL. 6. Website to database connectivity. 7. Designing and developing website. 8. Hosting site on the web server, web server configurations | | | | | |
| **Module No. 1** | **Introduction to Web Design** | | | | **8 hours** | |
| Introduction to WWW and Internet, Client Server Technologies, Application Layer Protocols: HTTP, HTTPS. Static web page design using HTML, HTML Tags, applying style to html page using CSS, CSS: inline, internal and external. Basic CSS: align, margin, padding, display, background, border. CSS grid layout | | | | | | |
| **Module No. 2** | **JavaScript & Ajax** | | | | **7 hours** | |
| Client-side Scripting using JavaScript, JavaScript Language basis: variable, operator, conditions, loops, string, array, object, event, functions, DOM Manipulation, Client-side form validations, AJAX, Reading XML and JSON. | | | | | | |
| **Module No. 3** | **PHP** | | | | **8 hours** | |
| Introduction to PHP, Language Basics: variable, data type, conditional, loop, array, Environment for running PHP: XAMPP, PHP Forms: Form Handling (GET and POST), Regular Expression, Server-Side Form Validation. | | | | | | |
| **Module No. 4** | **Advanced PHP** | | | | **7 hours** | |
| PHP Cookie, Sessions, Call-back functions, JSON, Filters, Errors and Exceptions, PHP File Handling: open, read, create and upload. | | | | | | |
| **Module No. 5** | **Database Connectivity** | | | | **8 hours** | |
| Introduction to MySQL Database, Basic DDL, DML, DCL syntax, Connectivity between PHP and MySQL, CRUD Operation, PHP XML and PHP AJAX. | | | | | | |
| **Module No. 6** | | **Advanced Technologies** | | | **7 hours** | |
| Advanced Technologies: MVC Architecture, Introduction to JS frameworks, Angular JS, Microsoft Technologies: ASP.NET, API and Webservices, Content management System: WordPress. | | | | | | |
| **Text Books**   1. Robin Nixon “Learning PHP, MySQL & JavaScript,”, O'Reilly Media, Inc., 5th edition, 2018. | | | | | | |
| **References**   1. Esposito Dino “Modern Web Development: Understanding Domains, Technologies, And User Experience”, Microsoft Press, 1st edition, 2016. 2. Randy Connolly and Ricardo Hoar “Fundamentals of Web Development”, Pearson, 1st edition, 2016. 3. N. P. Gopalan and J. Akilandeswari “Web Technology: A Developer's Perspective”, PHI, 1st edition, 2014. | | | | | | |

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| **Mode of Evaluation** | Cumulative Lab Assessment 25%  Continuous Assessment Test-1 20%  Continuous Assessment Test-2 20%  ~~Continuous Assessment Test-3 20%~~  Final Assessment Test 20%  Practical Assessment (Mini Project) 15% |
| **Recommended by the Board of Studies on** | XX-XX-XXXX |
| **Date of Approval by the Academic Council** |  |

**Lab Exercises**

EXPERIMENT-1: Static web page using html and CSS

EXPERIMENT-2: Designing a html form

EXPERIMENT-3: Create webpage layouts using flex and grid

EXPERIMENT-4: Client-side validation using java script

EXPERIMENT-5: Create a webpage with DOM manipulation using Java script

EXPERIMENT-6: Implementation of AJAX for reading JSON and XML file

EXPERIMENT-7: Server-side validation using PHP

EXPERIMENT-8: CRUD operation using PHP and MYSQL

EXPERIMENT-9: Implementation of session and cookie in PHP

EXPERIMENT-10: File handling using PHP, Implementation of AJAX in PHP

EXPERIMENT-11: Create a SPA using Angular JS

EXPERIMENT-12: Implement MVC using ASP.NET

EXPERIMENT-13: CMS using WordPress