COURSE MODULE: WEB APPLICATION DEVELOPMENT

Course Coordinator: Prof. Umme Hani Sharrif	Academic Year : **2024-25**

Department: Master of Computer Application

Course Code	Course Title	Core/Elective	Prerequisite	Contact Hours	Total Hrs/ Sessions
				L:T: P:S	
MMC205	WEB APPLICATION DEVELOPMENT	IPCC		2:1:0	40(TH)

Course Learning Objective:

The course will enable the students to:

1. To understand the fundamental concepts and technologies of web application development.

2. To gain proficiency in front-end and back-end web development.

3. To learn and apply modern web frameworks and libraries.

4. To develop skills in creating responsive and dynamic web applications.

5. To prepare students for industry roles requiring expertise in web development.

Teaching-Learning Process (General Instruction):

1. Adopt different types of teaching methods to develop the outcomes through PowerPoint presentations and Video demonstrations.

2. Adopt collaborative (Group Learning) Learning in the class.

3. Adopt Problem Based Learning (PBL), which fosters students' Analytical skills and develops thinking skills such as evaluating, generalizing, and analyzing information.

Module-1

Introduction to Web Development and HTML5: Web Development Basics: Introduction to web technologies and protocols, Client-server architecture, Overview of front-end and back-end development

HTML5 Fundamentals: HTML5 elements and attributes, Semantic HTML5 tags, Forms and input types, Multimedia elements (audio, video)

Advanced HTML5: Canvas and SVG for graphics, HTML5 APIs(Geolocation, Web Storage, Web Workers), Offline web applications using AppCache.

TLP: PowerPoint Presentation, Chalk and Talk

Module-2

CSS3 and Responsive Web Design: CSS3 Basics:

CSS3 Basics: Introduction to CSS3, Selectors, properties, and values, Box model, layout, and positioning, Flexbox and Grid layouts. Responsive Web Design: Media queries, Responsive design principles, Fluid grids and flexible images, Mobile-first design approach. CSS Frameworks: Introduction to Bootstrap, Bootstrap components and utilities, Customizing Bootstrap with Sass. .

TLP: PowerPoint Presentation, Chalk and Talk

Module-3

JavaScript and DOM Manipulation:

JavaScript Basics: Introduction to JavaScript, Variables, data types, and operators, Control structures (if-else, loops), Functions and scope

Document Object Model (DOM): DOM structure and manipulation, Event handling and event listeners, Creating and modifying DOM elements, Form validation using JavaScript

Advanced JavaScript: Asynchronous JavaScript (callbacks, promises, async/await), AJAX and Fetch API, Introduction to JavaScript libraries (e.g., jQuery).

TLP: PowerPoint Presentation, Chalk and Talk

Module-4

Front-End Frameworks and AngularJS: Introduction to Front-End Frameworks: Importance of front-end frameworks, Overview of popular frameworks (React, Angular, Vue)

AngularJS Basics: Introduction to AngularJS, Modules, controllers, and scope, Directives, expressions, and filters

Advanced AngularJS: Services and dependency injection, Routing and single-page applications (SPAs), Data binding and form handling, Custom directives and components.

TLP: PowerPoint Presentation, Chalk and Talk

Module-5

Back-End Integration and Deployment: Back-End Development: Introduction to server-side programming, Overview of server-side languages (Node.js, PHP, Python), RESTful web services and APIs, Database integration (SQL, NoSQL)

Full-Stack Development: Integrating front-end and back-end technologies, Developing fullstack web applications, Case studies on full-stack applications

Deployment and Security: Web application deployment (cloud platforms, hosting services), Security best practices for web applications, Authentication and authorization, Performance optimization. .

TLP: PowerPoint Presentation, Chalk and Talk

Course Outcomes:

At the end of the course, the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Demonstrate an understanding of web technologies and protocols.	L1
CO2	Develop and deploy web applications using HTML5, CSS3, JavaScript, and modern frameworks.	L1, L2
CO3	Apply responsive design principles using frameworks like Bootstrap.	L3
CO4	Implement dynamic web applications using AngularJS.	L4, L5
CO5	Integrate front-end and back-end technologies to create full-stack web applications.	L5

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

1. Two Unit Tests each of **25 Marks**

2. Two assignments each of **25 Marks** or one **Skill Development Activity of 50 marks a to attain the COs and POs**

3. The sum of two tests, two assignments/skill Development Activities, will be scaled   down to 50 marks

4. **CIE methods/question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.**

SemesterEnd Examination:

1. The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.

2. The question paper will have ten full questions carrying equal marks.

3. Each full question is for 20 marks. There will be two full questions (with a maximum of four subquestions) from each module.

4. Each full question will have a subquestion covering all the topics under a module.

5. The students will have to answer five full questions, selecting one full question from each module

Assessment Details (both CIE and SEE)

List of Textbooks
1. Web Programming By Chris Bates , Wiley Publications 2. HTML5 Black Book by Dreamtech 3. Angular JS By Krishna Rungta 4. Bootstrap essentials by Snig by Packt-open source .

The Correlation of Course Outcomes (CO's) and Program Outcomes (PO's)

Subject Code: MMC205	TITLE: WEB APPLICATION DEVELOPMENT	Faculty: UMME HANI SHARRIF
List of Course Outcomes	Program Outcomes	

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3							
CO2								3
CO3			3					
CO4								3
CO5				3				
Total								