

SEMESTER II**Name of the Programme: MCA****Course code: CSA-507****Title of course: Web Development****Number of credits: 2 (2L-0T-0P)****Effective from AY: 2022-23**

<u>Prerequisites for the course</u>	Knowledge of HTML and basic of CSS; Internet Technologies & required protocols; object oriented programming	
<u>Objectives</u>	This course will introduce the learner to the different website development technologies	
<u>Content</u>	Introduction <ul style="list-style-type: none"> ● Evolution of internet & World Wide Web ● Client-Server Architecture ● Revisit HTML & CSS 	1 hour
	Enhancing HTML & CSS <ul style="list-style-type: none"> ● HTML 5 ● CSS3 	2 hours
	Front-end Design <ul style="list-style-type: none"> ● Good Design Rubrics ● Separation of concerns for HTML & CSS; structure vs visual representation ● HTML DOM ● CSS Box Model, pseudo -classes & -elements, CSS animation ● Adaptive & responsive design, viewport & media queries, mobile-first design ● Introduction to a design library and/or framework (e.g. Bootstrap) 	4 hours
	Client-side Scripting <ul style="list-style-type: none"> ● Dynamic web pages ● JavaScript, programming features, javascript events & functions ● Manipulating DOM ● Beyond ECMA 4 ● Introduction to a Javascript library and framework (e.g. JQuery, ReactJS) 	8 hours
	HTTP & Middle-ware <ul style="list-style-type: none"> ● HTTP, Request & Response, methods & error code, headers, URL encoding & decoding ● XML, data & XPath ● JSON 	3 hours
	Server-side Programming <ul style="list-style-type: none"> ● Server instance ● Request handling & response creation ● HTML forms & file uploads ● Session management & application data ● Database connectivity ● Introduction to a Server-side library and/or template engine and/or framework (e.g. PHP - Laravel; JSP - Spring) 	6 hours
	Advanced Web Development <ul style="list-style-type: none"> ● Model-View-Controller (MVC) & Model-View-ViewModel and others ● Web service architecture and micro-services ● REST calls, Asynchronous JavaScript and XML (AJAX) ● Independent client-server web development 	6 hours

	<ul style="list-style-type: none"> ● Difference between Server-side vs client-side rendering ● Introduction to Web stacks, JAM stack & full stack development 	
<u>Pedagogy</u>	Hands-on assignments / tutorials / peer-teaching / flip classroom/ presentations	
<u>References/ Readings</u>	<ol style="list-style-type: none"> 1. Robert W. Sebesta, "Programming the World Wide Web", Pearson Education 2. https://www.w3schools.com/ 3. Steven Holzner, "HTML 5 Black Book" 4. https://www.tutorialspoint.com/ 5. Frank W. Zammetti, "Modern Full-Stack Development", Apress 6. Nader Dabit, "Full Stack Serverless", O'Reilly 	
<u>Course Outcomes</u>	<ol style="list-style-type: none"> 1. Learner will be able to make decision on what web technology to use and for what purpose 2. Learner will have fair idea on the popular technologies used in website development 3. Learner will appreciate the architecture of web applications and the design decisions 	