

Lovely Professional University, Punjab

Course Code	Course Title	Lectures	Tutorials	Practicals	Credits	
INT219	FRONT END WEB DEVELOPER	2	0	2	3	
Course Weightage	ATT: 5 CA: 45 ETP: 50					

Course Outcomes :Through this course students should be able to

CO1 :: apply basic HTML elements, CSS properties and Bootstrap to create visually appealing web pages.

CO2 :: use JavaScript variables, functions, and events to enhance user interactivity on web pages.

CO3 :: develop interactive web forms and validate user input to enhance form handling.

CO4 :: manipulate HTML elements, handle events, and create dynamic web content using JavaScript and DOM.

CO5 :: employ jQuery for efficient element manipulation and work with JSON objects for seamless data exchange.

CO6 :: develop dynamic web applications using Angular, and HTTP requests with forms, components, and directives.

	TextBooks (T)		
Sr No	Title	Author	Publisher Name
T-1	HTML5 BLACK BOOK	KOGENT LEARNING SOLUTIONS INC.	DREAMTECH PRESS

	Reference Books (R)		
Sr No	Title	Author	Publisher Name
R-1	MASTERING HTML, CSS & JAVA SCRIPT WEB PUBLISHING	LAURA LE MAY, RAFE COLBURN, JENNIFER KYRNIN	BPB PUBLICATIONS
R-2	ANGULAR ESSENTIALS	DHANANJAY KUMAR	BPB PUBLICATIONS

Relevant Websites (RW)		
Sr No	(Web address) (only if relevant to the course)	Salient Features
RW-1	https://www.tutorialspoint.com/html5/html5_overview.htm	Overview of HTML
RW-2	https://www.tutorialspoint.com/html5/html5_web_forms2.htm	Form Elements
RW-3	https://www.w3schools.com/html/html_links.asp	Exploring hyperlinks and URLS
RW-4	https://www.w3schools.com/html/html_links.asp	HTML Tables

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RW-5	https://www.w3schools.com/html/html_links.asp	HTML Lists
RW-6	https://www.w3schools.com/html/html_links.asp	Working with Images in HTML
RW-7	https://www.w3schools.com/css/css_intro.asp	CSS
RW-8	https://www.w3schools.com/js/js_function_definition.asp	JavaScript
RW-9	https://www.w3schools.com/jquery/default.asp	Basics of jQuery
RW-10	https://angular.io/guide/what-is-angular	Angular introduction
RW-11	https://angular.io/guide/setup-local	Angular setup
RW-12	https://angular.io/guide/understanding-angular-overview	understanding of Angular components, modules, directives, dependency injection
RW-13	https://www.javatpoint.com/angular-8-directives	Angular Directives
RW-14	https://www.javatpoint.com/data-binding-in-angular-8	Data binding, string interpolation
RW-15	https://www.javatpoint.com/event-binding-in-angular-8	Event handling in angular
RW-16	https://angular.io/api/common/http/HttpRequest	Http request using angular
RW-17	https://dzone.com/articles/how-to-make-a-rest-api-call-in-angular	RESTAPI call in Angular
RW-18	https://getbootstrap.com/	Bootstrap understanding, setup to create a customized application
RW-19	https://www.javatpoint.com/angular-8-forms	angular forms
RW-20	https://www.javatpoint.com/features-of-angular-8	angular features
RW-21	https://www.javatpoint.com/angular-8-architecture	angular architecture
RW-22	https://www.javatpoint.com/angular-7-pipes	angular pipes

Audio Visual Aids (AV)

Sr No	(AV aids) (only if relevant to the course)	Salient Features
AV-1	http://nptel.ac.in/courses/106105084/25	Introduction to JavaScript
AV-2	http://nptel.ac.in/courses/106105084/13	Introduction to HTML

LTP week distribution: (LTP Weeks)	
Weeks before MTE	7
Weeks After MTE	7
Spill Over (Lecture)	4

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Detailed Plan For Lectures

Week Number	Lecture Number	Broad Topic(Sub Topic)	Chapters/Sections of Text/reference books	Other Readings, Relevant Websites, Audio Visual Aids, software and Virtual Labs	Lecture Description	Learning Outcomes	Pedagogical Tool Demonstration/ Case Study / Images / animation / ppt etc. Planned	Live Examples
Week 1	Lecture 1	Overview of HTML, CSS and JavaScript (Fundamentals of HTML)	T-1 R-1	RW-1 AV-2	In this Lecture/Practical the course will be introduced to the students along with introductory part of HTML.	Students will get to know about course content, evaluation scheme, and the utility of the course.	Web Browser and Notepad++	Static and Dynamic websites like google, lpu ums and facebook etc will be discussed.
	Lecture 2	Overview of HTML, CSS and JavaScript(Creating Style Sheet)	T-1 R-1	RW-4 RW-5 RW-6 RW-7	How to Apply CSS on Web Pages including CSS Types, Selectors, properties and background Images.	provide layout of web Pages by appling various types of CSS Properties.	Web Browser and Notepad++	E-Commerce Websites and LPU Website.
		Overview of HTML, CSS and JavaScript(CSS Box Model- Border properties, Padding properties, Margin properties)	T-1 R-1	RW-4 RW-5 RW-6 RW-7	How to Apply CSS on Web Pages including CSS Types, Selectors, properties and background Images.	provide layout of web Pages by appling various types of CSS Properties.	Web Browser and Notepad++	E-Commerce Websites and LPU Website.
Week 2	Lecture 3	Overview of HTML, CSS and JavaScript(Introduction to JavaScript)	T-1 R-1	RW-2 RW-3 RW-8	JavaScript Basics, its types, dialog boxes should be discussed.Adding JavaScript on Web Forms should be discussed.	Students will learn to apply JavaScript in various parts of HTML Pages.	Web Browser and Notepad++	Gmail Sign Up Page.
		Overview of HTML, CSS and JavaScript(Working with Web Forms and validating user input)	T-1 R-1	RW-2 RW-3 RW-8	JavaScript Basics, its types, dialog boxes should be discussed.Adding JavaScript on Web Forms should be discussed.	Students will learn to apply JavaScript in various parts of HTML Pages.	Web Browser and Notepad++	Gmail Sign Up Page.
		Overview of HTML, CSS and JavaScript(Javascript functions and events)	T-1 R-1	RW-2 RW-3 RW-8	JavaScript Basics, its types, dialog boxes should be discussed.Adding JavaScript on Web Forms should be discussed.	Students will learn to apply JavaScript in various parts of HTML Pages.	Web Browser and Notepad++	Gmail Sign Up Page.

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Week 2	Lecture 4	Overview of HTML, CSS and JavaScript(JavaScript Timing Events)	T-1 R-1	RW-1 RW-7 RW-8	Working with JavaScript Functions and Events and their interaction should be discussed.	Students will learn using functions and various events in JavaScript.	Web Browser and Notepad++	Home Page of LPU Website.
		Overview of HTML, CSS and JavaScript(JavaScript Image Slideshow)	T-1 R-1	RW-1 RW-7 RW-8	Working with JavaScript Functions and Events and their interaction should be discussed.	Students will learn using functions and various events in JavaScript.	Web Browser and Notepad++	Home Page of LPU Website.
Week 3	Lecture 5	Overview of HTML, CSS and JavaScript(Recursive function in JavaScript)	T-1 R-1	RW-8	How recursive function works in JavaScript should be covered.	Students will learn how to make use of Recursive functions in JavaScript.	Web Browser and Notepad++	UMS Web Pages.
	Lecture 6	Overview of HTML, CSS and JavaScript(Error handling in JavaScript)	T-1 R-1	RW-8	Working of error handling with try catch and finally in JavaScript. Code Based Test should be allocated to Students to be submitted in next Week.	Students will learn how to Use try/catch/finally to handle run time errors in JavaScript.	Web Browser and Notepad++	UMS Web Pages.
Week 4	Lecture 7	Document Object Model in JavaScript(Document Object Model)	T-1 R-1	RW-8 AV-1	Document Object Model should be discussed in JavaScript. Project to should be allocated to Students in Groups.	should be discussed in JavaScript. Students will learn use Document Object Model in JavaScript and its uses.	Web Browser and Notepad++	UMS Web Pages.
	Lecture 8	Document Object Model in JavaScript(Programming HTML DOM with JavaScript)	T-1 R-1	RW-8 AV-1	Programming HTML DOM should be discussed in JavaScript and how to apply it for Web Pages	Students will learn use Document Object Model in JavaScript and its uses.	Web Browser and Notepad++	Home Page of LPU Website
		Document Object Model in JavaScript(Assigning event handlers in JavaScript using DOM object property)	T-1 R-1	RW-8 AV-1	Programming HTML DOM should be discussed in JavaScript and how to apply it for Web Pages	Students will learn use Document Object Model in JavaScript and its uses.	Web Browser and Notepad++	Home Page of LPU Website
Week 5	Lecture 9	Document Object Model in JavaScript(addeventlistener and removeeventlistener in JavaScript)	T-1 R-1	RW-8 AV-1	How DOM object property assigns event handlers to events need to be discussed.	Students will learn how to assign event handlers in JavaScript Using DOM.	Web Browser and Notepad++	UMS Web Pages
	Lecture 10	Document Object Model in JavaScript(Event bubbling in JavaScript)	T-1 R-1	RW-8 AV-1	Nesting of HTML elements in terms of Event Bubbling should be discussed	Students will learn how to use nesting of HTML elements in JavaScript.	Web Browser and Notepad++	UMS Web Pages

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Week 5	Lecture 10	Document Object Model in JavaScript(Image gallery with thumbnails in JavaScript)	T-1 R-1	RW-8 AV-1	Nesting of HTML elements in terms of Event Bubbling should be discussed. Evaluation 1 will be taken upto 2nd unit	Students will learn how to use nesting of HTML elements in JavaScript.	Web Browser and Notepad++	UMS Web Pages
Week 6	Lecture 11	Working with jQuery and JSON(Basics of jQuery)	T-1 R-1	RW-9	How to use jQuery in Web Applications.	Students will learn how to use jQuery and its events in Web Pages.	Web Browser and Notepad++	
		Working with jQuery and JSON(jQuery Events)	T-1 R-1		How to use jQuery in Web Applications.	Students will learn how to use jQuery and its events in Web Pages.	Web Browser and Notepad++	
		Working with jQuery and JSON(Benefits of using CDN)	T-1 R-1		How to use jQuery in Web Applications.	Students will learn how to use jQuery and its events in Web Pages.	Web Browser and Notepad++	
		Working with jQuery and JSON(jQuery Selectors)	T-1 R-1		How to use jQuery in Web Applications.	Students will learn how to use jQuery and its events in Web Pages.	Web Browser and Notepad++	
	Lecture 12	Working with jQuery and JSON(jQuery input vs :input)	T-1 R-1	RW-9	Working with jQuery and JSON(Benefits of using CDN). Working with jQuery and JSON(jQuery DOM manipulation methods)	Use of Content Delivery Network in jQuery and how to load jQuery from CDN.	Students will learn how to use Content Delivery Network in jQuery.	Web Browser and Notepad++
		Working with jQuery and JSON(jQuery DOM manipulation methods)	T-1 R-1	RW-9	Working with jQuery and JSON(Benefits of using CDN). Working with jQuery and JSON(jQuery DOM manipulation methods)	Use of Content Delivery Network in jQuery and how to load jQuery from CDN.	Students will learn how to use Content Delivery Network in jQuery.	Web Browser and Notepad++

Week 6	Lecture 12	Working with jQuery and JSON(jQuery Elements)	T-1 R-1	RW-9	Working with jQuery and JSON(Benefits of using CDN). Working with jQuery and JSON(jQuery DOM manipulation methods)	Use of Content Delivery Network in jQuery and how to load jQuery from CDN.	Students will learn how to use Content Delivery Network in jQuery.	Web Browser and Notepad++
		Working with jQuery and JSON(Working with JSON Objects)	T-1 R-1	RW-9	Working with jQuery and JSON(Benefits of using CDN). Working with jQuery and JSON(jQuery DOM manipulation methods)	Use of Content Delivery Network in jQuery and how to load jQuery from CDN.	Students will learn how to use Content Delivery Network in jQuery.	Web Browser and Notepad++
Week 7	Lecture 13	Working with jQuery and JSON(JSON Arrays)	T-1 R-1		How to Create JSON arrays. How to convert JSON object to string should be discussed.	Students will be able to create JSON arrays.	Web Browser	UMS Web Pages
		Working with jQuery and JSON(Nested JSON object)	T-1 R-1		How to Create JSON arrays. How to convert JSON object to string should be discussed.	Students will be able to create JSON arrays.	Web Browser	UMS Web Pages
		Working with jQuery and JSON(Conversion of JSON object to string)	T-1 R-1		How to Create JSON arrays. How to convert JSON object to string should be discussed.	Students will be able to create JSON arrays.	Web Browser	UMS Web Pages
		Working with jQuery and JSON(Conversion of string to JSON object)	T-1 R-1		How to Create JSON arrays. How to convert JSON object to string should be discussed.	Students will be able to create JSON arrays.	Web Browser	UMS Web Pages
		SPILL OVER						
Week 7	Lecture 14				Spill Over			
		MID-TERM						
Week 8	Lecture 15	Working with Bootstrap (Introduction to Bootstrap)	R-1	RW-18	How to download, setup and create our first bootstrap web page.	Students will learn Students will learn about the basics of Bootstrap.	Web Browser and Notepad++	

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Week 8	Lecture 15	Working with Bootstrap (Setting up Bootstrap)	R-1		How to download, setup and create our first bootstrap web page.	Students will learn Students will learn about the basics of Bootstrap.	Web Browser and Notepad++	Responsive Based WebSites
	Lecture 16	Working with Bootstrap (Bootstrap Grid System)	R-1		To create headings, paragraphs, ordered lists, unordered lists, inline elements etc in a way that would be appealing to the users using bootstrap typography	The students will learn how to create headings, paragraphs, ordered lists, unordered lists, inline elements using bootstrap typography.	Web Browser and Notepad++	
		Working with Bootstrap (Bootstrap Image Gallery)	R-1		To create headings, paragraphs, ordered lists, unordered lists, inline elements etc in a way that would be appealing to the users using bootstrap typography	The students will learn how to create headings, paragraphs, ordered lists, unordered lists, inline elements using bootstrap typography.	Web Browser and Notepad++	
		Working with Bootstrap (Bootstrap Typography)	R-1		To create headings, paragraphs, ordered lists, unordered lists, inline elements etc in a way that would be appealing to the users using bootstrap typography	The students will learn how to create headings, paragraphs, ordered lists, unordered lists, inline elements using bootstrap typography.	Web Browser and Notepad++	
Week 9	Lecture 17	Working with Bootstrap (Bootstrap Blockquotes and Lists)	R-1		Working with blockquotes and lists.	The students will learn how to work with blockquotes and lists.	Web Browser and Notepad++	Responsive Based ECommerce WebSites
		Working with Bootstrap (Bootstrap Code Blocks)	R-1		Working with blockquotes and lists.	The students will learn how to work with blockquotes and lists.	Web Browser and Notepad++	Responsive Based ECommerce WebSites
	Lecture 18	Working with Bootstrap (Bootstrap Table Classes)	R-1		bootstrap table and button classes and their use.	The students will learn how to use bootstrap table classes in Web Pages	Web Browser and Notepad++	E-Commerce Websites
		Working with Bootstrap (Bootstrap Button Classes)	R-1		bootstrap table and button classes and their use.	The students will learn how to use bootstrap table classes in Web Pages	Web Browser and Notepad++	E-Commerce Websites

Week 10	Lecture 19	Working with Bootstrap (Bootstrap Dropdown)	R-1		working with drop down menu classes and developing customized applications using Bootstrap.	The students will learn how to use bootstrap in Web Pages	Web Browser and Notepad++	E-Commerce Websites
		Working with Bootstrap (Create a customized application using Bootstrap)	R-1		working with drop down menu classes and developing customized applications using Bootstrap.	The students will learn how to use bootstrap in Web Pages	Web Browser and Notepad++	E-Commerce Websites
	Lecture 20				Test - Code based 2			
Week 11	Lecture 21	Basics of Angular (Introduction to Angular)	R-2	RW-10	Uses and need of Angular need to be discussed. How to download, setup Angular	Students will learn how to use Angular in Web Pages.	Web Browser and Notepad++	
		Basics of Angular(features)	R-2	RW-20	Uses and need of Angular need to be discussed. How to download, setup Angular	Students will learn how to use Angular in Web Pages.	Web Browser and Notepad++	
		Basics of Angular (Installation)	R-2	RW-11	Uses and need of Angular need to be discussed. How to download, setup Angular	Students will learn how to use Angular in Web Pages.	Web Browser and Notepad++	
	Lecture 22	Basics of Angular (architecture)	R-2	RW-21	Understanding of Angular architecture and working with Typescript.	Students will learn how to use Typescript in Angular to create Web Pages.	Web Browser and Notepad++	
		Basics of Angular(basics of TypeScript)	R-2		Understanding of Angular architecture and working with Typescript.	Students will learn how to use Typescript in Angular to create Web Pages.	Web Browser and Notepad++	Attendance Page of UMS Website of LPU.
Week 12	Lecture 23	Basics of Angular(modules)	R-2	RW-12	How to create and use Angular modules and components	Students will make use of modules and components in Angular.	Web Browser	
		Basics of Angular (components)	R-2	RW-12	How to create and use Angular modules and components	Students will make use of modules and components in Angular.	Web Browser	
	Lecture 24	Basics of Angular (directives-ngIf, ngStyle)	R-2	RW-12 RW-13	How to create and use Angular directives and data binding.	Students will make use of directives in Angular.	Web Browser	

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Week 12	Lecture 24	Basics of Angular (Databinding- string interpolation, event binding, property binding.)	R-2	RW-14 RW-15	How to create and use Angular directives and data binding.	Students will make use of directives in Angular.	Web Browser	
Week 13	Lecture 25				Project			
	Lecture 26	Handling forms and HTTP requests in Angular(Forms-reactive forms, template-driven forms)	R-2	RW-19	How to handle events in Angular need to be discussed.	Students will learn how to handle events in Angular.	Web Browser and Notepad++	
		Handling forms and HTTP requests in Angular(using angular pipes to transform output)	R-2	RW-22	How to handle events in Angular need to be discussed.	Students will learn how to handle events in Angular.	Web Browser and Notepad++	
Week 14	Lecture 27	Handling forms and HTTP requests in Angular(HTTP requests)	R-2	RW-16	How to implement sorting in Angular need to discussed.	Students will learn how to implement sorting in Angular.	Web Browser and Notepad++	
		Handling forms and HTTP requests in Angular(using services and Dependency Injection)	R-2	RW-12	How to implement sorting in Angular need to discussed.	Students will learn how to implement sorting in Angular.	Web Browser and Notepad++	
		Handling forms and HTTP requests in Angular(REST API call in Angular)	R-2	RW-17	How to implement sorting in Angular need to discussed.	Students will learn how to implement sorting in Angular.	Web Browser and Notepad++	
		SPILL OVER						
Week 14	Lecture 28				Spill Over			
Week 15	Lecture 29				Spill Over			
	Lecture 30				Spill Over			

Scheme for CA:

CA Category of this Course Code is:C010102 (Total 3 tasks, 1 compulsory and out of remaining 1 best out of 2 to be considered)

Component	Iscompulsory	Weightage (%)	Mapped CO(s)
Project	Yes	50	CO1, CO2, CO3, CO4, CO5, CO6
Test - Code based 1	NO	50	CO1, CO2, CO4
Test - Code based 2	NO	50	CO1, CO5, CO6

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Details of Academic Task(s)

Academic Task	Objective	Detail of Academic Task	Nature of Academic Task (group/individuals)	Academic Task Mode	Marks	Allottment / submission Week
Project	To access the students' web designing skills	The student will design a responsive website using HTML,CSS,JavaScript,Query,JSON,Angular and Bootstrap. The parameters of evaluation of the project will be User Interface (UI) Design, Code Quality, Functionality, Usability, Code Structure, Version Control, Documentation, Testing, Creativity and Innovation. Project must consist of minimum 4 webpages.	Individual	Online	30	4 / 13
Test - Code based 1	To assess the students' designing skills in HTML, CSS, and JavaScript.	Individual problems will be given to the students on HTML, CSS, and JavaScript. The content delivered till the end of 4th week will be covered.	Individual	Offline	30	4 / 5
Test - Code based 2	To assess the students' designing skills in JSON,JQuery,Agula r	The content will be covered up to end of 11th week.	Individual	Offline	30	11 / 12

MOOCs/ Certification etc. mapped with the Academic Task(s)

Academic Task	Name Of Certification/Online Course/Test/Competition mapped	Type	Offered By Organisation
Test - Code based 1	HTML, CSS, AND JAVASCRIPT FOR WEB DEVELOPERS	MOOCs	COURSERA

Where MOOCs/ Certification etc. are mapped with Academic Tasks:

1. Students have choice to appear for Academic Task or MOOCs etc.
2. The student may appear for both, In this case best obtained marks will be considered.

Detailed Plan For Practicals

Practical No	Broad topic	Subtopic	Other Readings	Learning Outcomes
Practical 1	List of Practicals	Design web page using table and list concept in HTML.		Understand the principles of creating an effective web page, including an in-depth consideration of information architecture.
Practical 2	List of Practicals	Design web page using images, links and frames in HTML.		To add elements to your web pages, including colors, text, images, and more.
Practical 3	List of Practicals	Design forms and perform various types of validations in HTML.		Personalize web pages using forms by performing multiple validations.
Practical 4	List of Practicals	Design attractive web page using CSS and JavaScript.		How to add advanced features to your website including special effects and widgets.

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Practical 5	List of Practicals	Implement the concept of event handlers in JavaScript using DOM object property.		Become familiar with graphic design principles of DOM that relate to web design and learn how to implement theories into practice.
Practical 6	List of Practicals	Implement event bubbling in JavaScript.		Implement events logic using JavaScript.
Practical 7	List of Practicals	Make Image gallery with thumbnails in JavaScript.		Summarize managing web page styles using JavaScript and CSS.
Practical 8	List of Practicals	Design web page using jQuery Selectors and elements.		Develop basic programming skills using Javascript and jQuery.
Practical 9	List of Practicals	Use JSON objects, arrays and string concept in your web pages.		Add advanced functionality to web applications using jQuery and JSON
Practical 10	List of Practicals	Design interactive website using Angular modules, directives concepts.		Develop fully working website by creating Angular components
Practical 11	List of Practicals	Design interactive website using Angular filters and events concepts.		Design Single page applications for Improved user experience
Practical 12	List of Practicals	Design customizable website using Bootstrap Grid System and Typography.		Build a mobile-first website using Bootstrap.
Practical 13	List of Practicals	Implement Bootstrap list, table, buttons and dropdowns.		Understand how the HTML, CSS and JavaScript components of Bootstrap work.
Practical 14	List of Practicals	Implement HTTP requests and dependency injection in Angular		Design web page with HTTP requests
	SPILL OVER			
Practical 15	Spill Over			