Course Title:	Web Application Development (CS3193)
Pre-requisite(s):	Object Oriented Programming (CS1143)
Credit Hours:	3
Instructor(s):	Mr. Muhammad Zeeshan Sabir
Text Book(s):	PHP and MySQL for Dynamic Web Sites, Larray Ullman
	PHP: The Complete Guide for Beginners to Advanced Detailed Approach By MG Martin
Reference Book(s):	• PHP & MySQL: Server-side Web Development 1st Edition by Jon Duckett
	• Laravel: Up & Running: A Framework for Building Modern PHP Apps by Matt Stauffer
Web Reference:	• https://www.w3schools.com/html/default.asp

Course Introduction:

This course will introduce concepts in programming web application servers. We will study of the fundamental architectural elements of programming web sites that produce content dynamically. We will be demonstrating the course using HTML, CSS, Java Script, PHP, MVC based Laravel framework, web services, AJAX. We will also cover the related topics as necessary so that students may build significant applications.

Course Objectives:

This course will be helpful in developing full stack web applications using PHP and Laravel MVC Framework. After completion of course, the students are expected to have developed skills in 1) front end interactive application design using design technologies: CSS, JQuery, AJAX, Alpine, 2) working on latest Laravel for web application development 3) application deployment 4) backend development using PHP 5) application maintainability concerns using MVC framework 6) patterns that are helpful in access control and authentications.

Course Learning Outcomes (CLOs):

At the end of this course, the students should be able to:

CLO1: Discuss client server web architecture along with issues related to web development.
[C2 - Comprehension]

CLO2: Apply programming techniques for web development and data manipulation through the adoption of world accepted standards. [C3 - Application]

CLO3: Design and Develop PHP web-based enterprise application using multiple tools and frameworks. [C3 - Application]

CLOs – PLOs Mapping:

	CLO:1	CLO:2	CLO:3
PLO:2 (Problem Analysis)	√		
PLO:3 (System Design)		√	
PLO:5 (Computing Tool Usage)			√

Course Contents:

Week	Contents
1	Introduction to Web, Web Architecture, TCP/IP, DNS, HTTP protocol, WWW, Web Browsers, HTTP Servers, Web Pages Work flow, Client side technologies, HTML Introduction. HTML Pages, HTML Boilerplate
2	HTML Tags and their usage, HTML Lists, Tables, Images, Hyperlinks, HTML Attributes, HTML Forms, HTML5, Sematic Tags, Colors
3	CSS introduction, CSS purpose, CSS selectors, CSS rules, Inline, Internal and External CSS, pseudo class selectors, CSS box model, borders, padding, margins, images

4	display, positioning, float, web page layouts, Grid Layout, Flex Layout, responsive layouts using media queries. CSS3 animations, transform, transitions, Advance properties, SVG
5	Bootstrap Introduction and purpose, Bootstrap classes and usage, buttons, responsive layout with Bootstrap grid system, UI components, Modal, Accordion, Draggable
6	Client-Side Scripting, JavaScript Introduction and Usage, Syntax, variables, conditions, loops, functions, JavaScript global objects (window, screen, history) Arrays & strings usage and methods, JavaScript DOM methods and attributes
7	jQuery introduction, Syntax and usage, selectors and actions, document ready, jQuery Events (Keyboard, Mouse Events), $(this), JSON and XML File Format, JSON Syntax, JSON XML Conversion, AJAX, AJAX Calls and its parameters
8	Server-side development, WAMP, PhpmyAdmin, Git overview, PHP basics and syntax, variables and statements, programming constructs, if statement, if-else statement, switch statement
Mid-Term Exam	
9	PHP iteration constructs, for, foreach, PHP functions, arrays and strings, MySQL
10	introduction to MySQL database, SQL queries Create, update, Show and delete in SQL, form submission and executing SQL queries using PHP
11	Performing create read, update, delete (CRUD) operations using PHP and MySql, Templating in PHP, php functions like include, date, and libraries, image uploads, user authentication system.
12	Object Oriented programming in PHP, Classes, Objects, constructors, Inheritance, Web APIs, using and consuming Web services, Postman tool
13	Laravel introductions, composer dependency manager, MVC architecture, Laravel echo system, Routing Systems, templating with blade
14	Introduction to controllers, creating and managing controllers, Templating and handling of views with Layouts, sharing data with views.
15	Eloquent Model, Creating and using models in Controllers, Model relationships, data base migrations, factories and seeders
16	Components based development, Complete MVC based web applications, using AlpineJS, Tailwind CSS and Livewire with Laravel (TALL stack)

Grading Policy:

S.No	Grading	% of Total Marks
1	Assignments	20
2	Quizzes	20
4	Mid-term Exam	20
5	Final Exam	40
	Total	**100**