



COMSATS University Islamabad

Department of Computer Science

Course Description Form (CDF)

Course Information

Course Code: **CSC336**

Course Title: **Web Technologies**

Credit Hours: **3(2,1)**

Lecture Hours/Week: **2**

Lab Hours/Week: **3**

Pre-Requisites: **CSC241–Object Oriented Programming**

Course Objectives

- To explain the fundamental concepts of web architectures and its applications;
- To provide an understanding of planning, designing and publishing a multi-page website;
- To provide hands-on experience of client-side technologies such as HTML, JavaScript, CSS;
- To provide practical experience of development of dynamic clients using modern development technologies, for example PHP, AJAX, MySQL

Course Contents

This course introduces the modern web technologies used for web development. Topics include Overview of Web Platforms; Web Architectures; Markup Languages; Styling; Client-Side Scripting Languages; Server-Side Technologies; Use of Databases in Web-based Applications; Web APIs; Programming under Platform Constraints; Security Issues; and Web Hosting.

Unit wise Major Topics:

Unit	Topic	No. of Teaching Hours
1.	Web Development: Overview, Platforms, Terminologies, Standards & Constraints, Applications Categories, and Development Environments.	1
2.	Tiered Web Architecture: One-Tier, Two-Tier, and N-Tier.	1
3.	Markup Languages: HTML, HTML5, and XHTML.	4
4.	Styling: Cascading Style Sheets (CSS), CSS3, Bootstrap Framework, CSS Extensions, and SASS.	7
5.	Client-Side Scripting (JavaScript): DOM, Data Validation, Animation, Event Handling, Regular Expressions.	6
6.	Server-Side Programming: Introduction to PHP & Laravel; Database Utilization & Interaction; CRUD Operations (Laravel); XML, AJAX, JSON; Web APIs Applications; Programming Via: Platform-Specific APIs & Platform Constraints; and SQL Injections.	11
Total Contact Hours		30

Mapping of CLOs and GAs

Sr.#	Unit #	Course Learning Outcomes	Blooms Taxonomy Learning Level	GA
CLO's for Theory				
CLO-1	1-2	Classify web architectures and related applications.	<i>Understanding</i>	2
CLO-2	3-5	Demonstrate the capabilities for developing professional	<i>Applying</i>	3-5

		front-end using client-side technologies.			
CLO-3	6	Illustrate the concepts of server-side technologies for secure database interactions.	Applying	3-5	
CLO's for Lab					
CLO-4	3-6	Apply the concepts of markup & scripting languages and client side technologies.	Applying	3-5	
CLO-5	2-6	Develop dynamic applications using current industrial practices.	Creating	1,3-6	
CLO Assessment Mechanism					
Assessment Tools	CLO-1	CLO-2	CLO-3	CLO-4	CLO-5
Quizzes	Quiz 1	Quiz 2 & 3	Quiz 4	-	-
Assignments	-	Assignment 1&2	Assignment 3&4	Lab Assignments	-
Midterm Exam	Mid Term Exam	Mid Term Exam	-	Mid Term Exam	-
Final Term Exam	Final Term Exam			-	Lab Project/ Lab Final Term Exam
Text and Reference Books					
Textbooks:					
1. Web Design Playground: HTML & CSS the Interactive Way, Paul McFedries, Manning, 2019.					
2. Beginning PHP and MySQL: From Novice to Professional, Frank M. Kromann, Apress, 2018.					
3. Laravel Up and Running, A Framework for Building Modern PHP Apps, Matt. Stauffer, Oreilly, 2019.					
Reference Books:					
1. Web Engineering, Sahil Rai, Kuk University Notes, 2020.					
2. Web Programming with HTML5, CSS, and JavaScript, John Dean, Jones & Bartlett Learning 2018.					