NATIONAL UNIVERSITY
Of Computer & Emerging Sciences, Lahore

Department of Computer Science

CS4032 – Web Programming
Fall 2023

Instructor Name: Muhammad Saifullah
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Office Location: M-109 (in front of CS Lab 4)
Office Hours: Monday 12:00 PM - 01:00 PM (email me to schedule a meeting)

Course Information:

Program: BS (CS) **Credit Hours:** 3 **Course Type:** Elective

Course Description/Objectives/Goals:

- To introduce the fundamental concepts of web architecture and programming.
- To learn basics of client and server-side programming along with prevalent technologies and frameworks
- To introduce modern practices such as AJAX and Web services
- To discuss Web Engineering issues such as Performance and Security

Course Learning Outcomes (CLOs):

At the end of the course students will be able to:	**Domain**	**BT* Level**
Understand concepts of web architecture and programming	C	2
Learn basics of client and server side programming	C	3
Learn modern practices such as AJAX and Web services, along with prevalent technologies and frameworks	C	3
Learn Web Engineering issues such as Performance and Security	C	3

* BT= Bloom's Taxonomy, C=Cognitive domain, P=Psychomotor domain, A= Affective domain
Bloom's taxonomy Levels: 1. Knowledge, 2. Comprehension, 3. Application, 4. Analysis, 5. Synthesis, 6. Evaluation

(Tentative) Weekly Schedule

Week 1	**Lecture 1** Principles of Web Architecture	**Lecture 2** HTTP Protocol and HTML
Week 2	**Lecture 1** CSS + HTML	**Lecture 2** CSS + HTML + JavaScript
Week 3	**Lecture 1** Bootstrap and JavaScript	**Lecture 2** Basics of JavaScript Language
Week 4	**Lecture 1** Application of JavaScript in DOM manipulation	**Lecture 2** Application of JavaScript in DOM manipulation and Ajax
Week 5	**Lecture 1** jQuery and Ajax	**Lecture 2** jQuery
MID 1		
Week 6	**Lecture 1** Introduction to web servers and client-side programming	**Lecture 2** Client-side programming
Week 7	**Lecture 1** State management techniques and issues	**Lecture 2** State management techniques and issues
Week 8	**Lecture 1** Server-side Frameworks	**Lecture 2** Server-side Frameworks
Week 9	**Lecture 1** Server-side Frameworks	**Lecture 2** Deployment issues
Week 10	**Lecture 1** Request / Response cycle	**Lecture 2** Cross-domain issues
MID 2		
Week 11	**Lecture 1** MVC Architecture	**Lecture 2** Web services
Week 12	**Lecture 1** Performance and scalability issues	**Lecture 2** Performance and scalability issues
Week 13	**Lecture 1** Security issues	**Lecture 2** Security issues
Week 14	**Lecture 1** Security issues	**Lecture 2** Templates

(Tentative) Grading Criteria:

Assignments/Project (**25%)**
Quiz (**10 %)**
Midterms **(25 %)**
Final Exam **(40 %)**

Course Policies:

- **Plagiarism** in any work (Quiz, Assignment, Midterms, and Final Exam) from any source, Internet or a Student may result in **F** grade or deduction of absolute marks.
- 80% attendance is required for appearing in the Final exams.
- Minimum requirement to pass this course is to obtain at least 50% marks under application of CS department's grading policies.
- **Absolute grading** scheme will be used.