NATIONAL UNIVERSITY
of Computer & Emerging Sciences, Lahore

Department of Computer Science

CS406 – Web Programming
Spring 2020

Instructor Name: Farooq Ahmed **TA Name:**
Email address: farooq.ahmad@nu.edu.pk **Email address:**
Office Location/Number:
Office Hours: Friday 09:00 AM – 12:00 PM

Course Information:

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

Class Meeting Time: Section A: Mon/Wed 09:30 – 11:00 AM
Section B: Mon/Wed 11:00 – 12:30 PM

Class Venue:

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

Course Textbook:

None

Additional references and books related to the course:

Web resources shared on need basis

Tentative Weekly Schedule

Week 1 Introduction	**Lecture 1** Principles of Web Architecture	**Lecture 2** HTTP Protocol and HTML
Week 2 Client-side Programming	**Lecture 1** CSS	**Lecture 2** CSS
Week 3 Client-side Programming	**Lecture 1** Responsive UI design and Cross-browser compatibility	**Lecture 2** Basics of Javascript Language
Week 4 Client-side Programming	**Lecture 1** Object-oriented Javascript	**Lecture 2** Application of Javascript in DOM manipulation
Week 5 Client-side Programming	**Lecture 1** Application of Javascript in DOM manipulation	**Lecture 2** Overview of Javascript client-side frameworks
MID 1		
Week 6 Server-side Programming	**Lecture 1** Introduction to web servers and server-side programming	**Lecture 2** Request / Response cycle
Week 7 Server-side Programming	**Lecture 1** State management techniques and issues	**Lecture 2** MVC Architecture
Week 8 Server-side Programming	**Lecture 1** Server-side Frameworks	**Lecture 2** Server-side Frameworks
Week 9 Server-side Programming	**Lecture 1** Server-side Frameworks	**Lecture 2** Deployment issues
Week 10 Advanced Web Programming	**Lecture 1** AJAX	**Lecture 2** Cross-domain issues
MID 2		
Week 11 Advanced Web Programming	**Lecture 1** Web services	**Lecture 2** Web services
Week 12 Web Engineering	**Lecture 1** Performance and scalability issues	**Lecture 2** Performance and scalability issues
Week 13 Web Engineering	**Lecture 1** Security issues	**Lecture 2** Security issues
Week 14 Emerging Trends	**Lecture 1** Web sockets	**Lecture 2** HTTP/2 and HTTP/3

(Tentative) Grading Criteria:

Assignments/Project **(30%)** Quiz **(5 %)** 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.