NATIONAL UNIVERSITY
of Computer & Emerging Sciences, Lahore

DepartmentofComputerScience

CS440 – Software for Mobile Devices
Spring 2023

Instructor Name: Aliya Farooq **TA Name:**
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Office Location/Number: Room 05. New Faculty offices.
Office Hours: Wednesday 9 – 11 AM

Course Information:

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

Pre-requisites: Database Systems (CS-219),
Object-oriented Analysis and Design (CS-309) / Software Design and Analysis (CS-324)

Class Meeting Time:

Class Venue:

Course Description/Objectives/Goals:

- Understanding the challenges of application development for mobile devices
- Understanding the user experience issues associated with mobile application development,
- Designing, developing, testing and deploying mobile applications using various tools and technologies

Course Learning Outcomes (CLOs):

At the end of the course students will be able to:	**Domain**	**BT* Level**
Discuss different architectures and frameworks for Mobile Application Development	C	1
Develop mobile applications using current software development environments	C	3
Compare user experience, performance and other trade-offs in mobile application development,	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:

1. Android Developer Resources (http://developer.android.com)
2. Professional Android, Fourth Edition (2018) by Reto Meier, Ian Lake
3. Android Internals by Jonathan Levin
4. Android Notes for Professionals (https://books.goalkicker.com/AndroidBook/)
5. Mobile Developer's Guide to Galaxy, 18th Edition by Open Exchange
   https://www.open-xchange.com/resources/mobile-developers-guide-to-the-galaxy/

Tentative Weekly Schedule

Week 1 Introduction	**Lecture 1** Mobile Application Development	**Lecture 2** Android Fundamentals
Week 2 Android	**Lecture 1** UI Programming and Patterns	**Lecture 2** UI Programming and Patterns
Week 3 Android	**Lecture 1** UI Programming and Patterns	**Lecture 2** UI Programming and Patterns
Week 4 Android	**Lecture 1** UI Programming and Patterns	**Lecture 2** UI Programming and Patterns
Week 5 Engineering Issues	**Lecture 1** HCI Issues	**Lecture 2** Responsive Design
MID 1		
Week 6 Engineering Issues / Android	**Lecture 1** Responsive Design	**Lecture 2** Gesture Handling
Week 7 Android	**Lecture 1** Data Storage (Files and Shared Preferences)	**Lecture 2** Data Storage (Databases)
Week 8 Android	**Lecture 1** Application Architecture (Intents)	**Lecture 2** Application Architecture (Content Providers)
Week 9 Android	**Lecture 1** Application Architecture (Services)	**Lecture 2** Application Architecture (Broadcast Receivers)
Week 10 Android	**Lecture 1** Processes, Threads and Asynchronous Programming	**Lecture 2** Processes, Threads and Asynchronous Programming
MID 2		
Week 11 Android	**Lecture 1** Inter-process Communication	**Lecture 2** Web connectivity
Week 12 Android / Engineering Issues	**Lecture 1** Web Connectivity	**Lecture 2** Hybrid Applications
Week 13 Android / Engineering Issues	**Lecture 1** Location-based services	**Lecture 2** Network Programming / Bluetooth
Week 14 Miscellaneous	**Lecture 1** Monetization and Analytics	**Lecture 2** Cross-platform development

(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.
- Absolute Grading will be done, inline with department policies.