Software for Mobile Devices
Course Outline (Fall 2019)

Instructor: Mr. Mughees Musaddiq **(Visiting Faculty)**
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Credit Hours: 3
Course Name: Software for Mobile Devices (Section C)
Course Code: CS440
Class Schedule: Tuesday and Thursday: 08:00am to 9:20am

Objective:

This course focuses on the development of software for mobile devices. Students shall learn how to develop software applications for current and emerging mobile device platforms. This involves primarily:
- 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

Prerequisites: Object-Oriented Analysis & Design

Course Outline

Topic	Lectures
Introduction to Software Development for Mobile Devices	
Introduction to Mobile Application Development	1
Introduction to Java Programming	2
Android Programming	
Introduction to Android Platform (Architecture life cycle)	1
UI Programming (declarative & programmatic approach)	4
Data Storage (Sqlite, Ormlite, Room libraries)	2
Application Architecture Components (Broadcast listeners, Intent, Content Providers, Services, Activities)	4
Processes and Inter-process communication Threads and Asynchronous Programming	2
Applications and Engineering Issues	
Design patterns (MVP, MVVM, Observer, Clean Architecture)	3
3rd Party Libraries: Firebase Modules, butterknife2, Job schedulers, Google Analytics, Activity Recognition API etc	4
Responsive UI Design	1
Location-based Services (Google Fused Location)	1
Network Programming (Retrofit Library, client server communication)	2
Monetization, Analytics and Distribution	1

Assessment

Assignments/Quiz(s)/Homeworks   15%

Projects	20%
Midterms	25%
Final Exam	40%

Reference Material

- Android Developer Resources   (http://developer.android.com)
- Android Developer's Cookbook, Second Edition (2013)   by   Ronan Schwarz et. al.
- Designing the Mobile User Experience (2007)   by   Barbara Ballard
- Mobile Developer's Guide to Galaxy, 16th Edition   by   Enough Software http://enough.de/ en/app-coaching/devguide/
- https://blog.cleancoder.com/uncle-bob/2014/06/30/ALittleAboutPatterns.html
- https://fi.ort.edu.uy/innovaportal/file/2032/1/design_principles.pdf
- https://developer.android.com/topic/libraries/architecture
- https://developer.android.com/guide/topics/resources/providing-resources#AlternativeResources
- https://material.io/tools/devices/
- https://developer.android.com/guide/topics/data/data-storage
- http://ormlite.com/android/examples/
- https://medium.com/@ajaysaini.official/building-database-with-room-persistence-library-ecf7d0b8f3e9
- https://www.tldevtech.com/best-android-orm-libraries-to-use/
- https://developer.android.com/topic/libraries/support-library/packages#design
- https://github.com/shahwaiz90/Android-ListView
- https://github.com/shahwaiz90/android-interview-questions
- https://github.com/shahwaiz90/Android-Async-WeakReference
- https://github.com/shahwaiz90/InterfaceCommunication
- https://github.com/shahwaiz90/android-mvp
- https://commonsware.com/Android/
- https://www.linkedin.com/pulse/how-create-publish-your-android-library-ahmad-shahwaiz/