COMP 319A - MOBILE DEVICE PROGRAMMING – ANDROID
(Fall 2023 Syllabus)

Instructor:	Ahmet Geymen
Number of Credits:	3
Prerequisites:	COMP 202 or COMP 132 or Consent of the Instructor
Language:	English

Course Description

With our Android Development Course, we explore the world of mobile application development. Gain proficiency in Kotlin and Jetpack Compose, Android's recommended toolkit for building native UI, to create basic but also visually appealing applications. Through practical projects and real-world application development, acquire the skills to craft modern Android apps that cater to the needs of today's tech-savvy users. Embark on a journey into the realm of Android development and unlock the potential to shape the future of mobile experiences

Course Objectives

- Explore the latest advancements in Android development, utilizing contemporary tools and technologies, with a focus on Kotlin, a modern and expressive programming language.
- Embrace Jetpack Compose, a declarative UI toolkit, to unlock new possibilities for building dynamic and responsive user interfaces in Android applications.
- Develop hands-on projects and exercises to apply knowledge and creativity in creating real-world Android applications, while learning best practices for mobile development.

Course Contents

Week 1	Introduction to Kotlin Setup Android Studio Build a basic Layout
Week 2	Kotlin fundamentals Gradle Interacting with UI and state
Week 3	More Kotlin fundamentals Display list and use Material Desing Material Theming Resources Colors, Shapes & Typography
Week 4	Navigation and app architecture ViewModels, UI State and StateFlows Responsive UI Project Proposals (last week for proposals)

Week 5	Connect to the Internet Using Retrofit to retrieve data Load and display images using the Coil library
Week 6	Data persistence Room library Preference DataStore
Week 7	Background Tasks WorkManager Notifications & Alarms
Week 8	Views and Compose View-based UI toolkit and build app UI using XML Interoperability
Week 9	Animations in Compose
Week 10	Sensors, APIs Location Services Camera
Week 11	Accessibility Testing Performance inspection
Week 12	Distributing Apps App bundles Play Store
Week 13	Misc: What makes an app better? UI Design User experience App Quality
Week 14	Final project presentations

Grading

Project	4 mini projects	%60
Project	1 final project	%40
Total		%100

Sources

https://developer.android.com/modern-android-development
https://developer.android.com/studio/intro
https://kotlinlang.org/docs/home.html
https://github.com/android