CMPS 312 – Mobile Application Development

Syllabus and Course Admin

Dr. Abdelkarim Erradi

Department of Computer Science & Engineering

Qatar University


بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

Outline

- Course introduction
- Grading
- Policies

About the Instructor

- **Dr. Abdelkarim Erradi**
  - **Office:** H07 - C309, College of Engineering
  - **Phone:** 4403 4254

Office hours:

- **Tues 12pm to 1pm** for Male at **H07-BL013**
- **Wed 12:30pm to 1:30pm** for Female at **H07-A399**
- You can talk to me **after** class if you have quick issues/questions
- Best way to contact me is via **MS Teams chat**

Course Learning Outcomes

1. Design a mobile application based on established **design patterns** and **best practices**.

2. Design and implement an interactive and effective **user interface** for a mobile application.

3. Practice integrating **on-device sensors**, **local data stores** and **Cloud services**

4. **Design**, **implement** **and** **test** a mobile application using appropriate features, tools and application programming interfaces (APIs) of the mobile development platform.

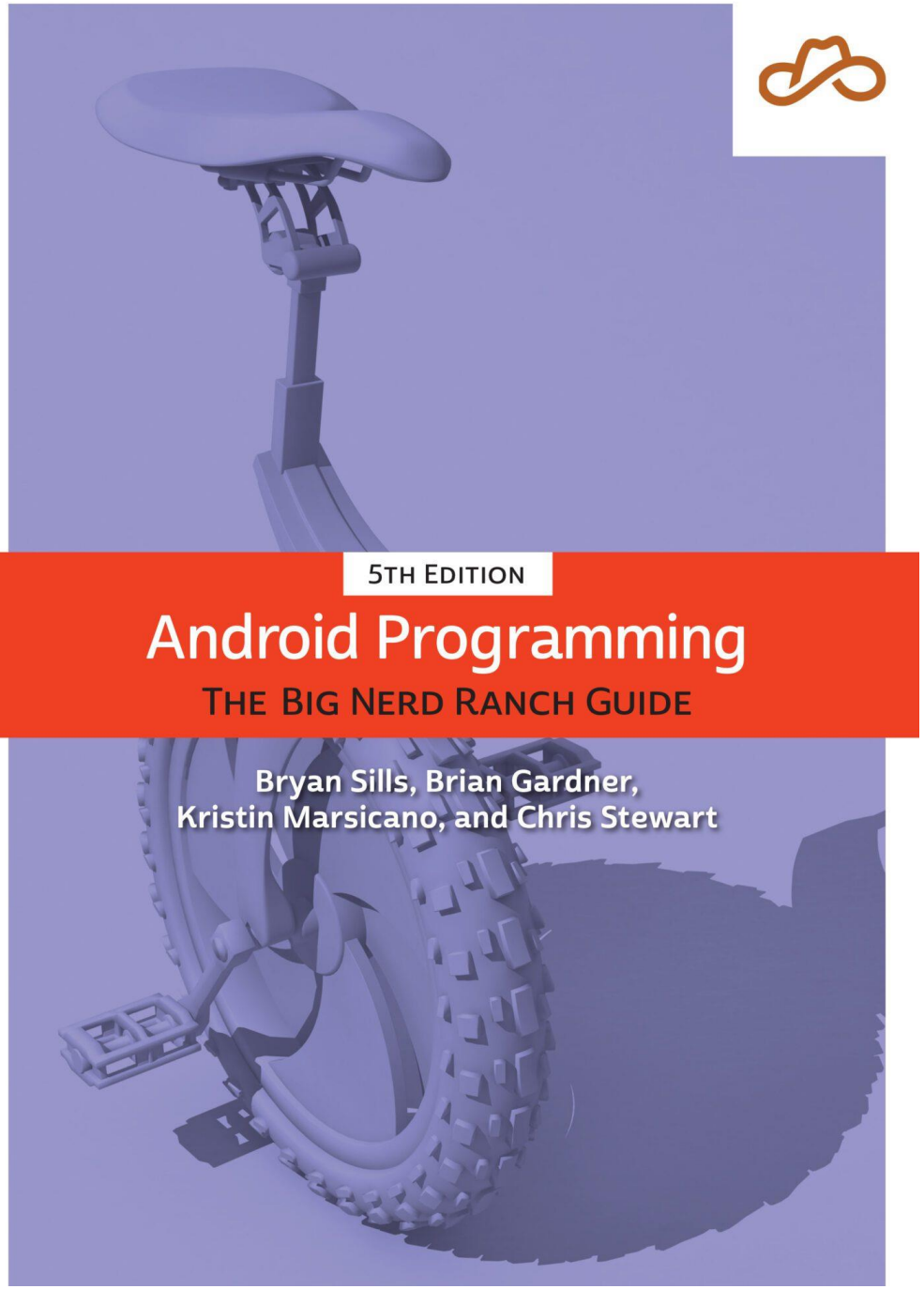
Schedule

Topics	Weeks	Chapters
Kotlin programming language	1	Online readings
Kotlin Object-Oriented Programming (OOP), Collections and Lambda	1	
Android Fundamentals	1	1
User Interface (UI) development: Components and Layouts	1	3, 6, 14, 22
Display Lists including search and sort	1	9
Navigation	1	Online readings
Model-View-ViewModel (MVVM) Architecture	1	4, 19
Coroutines for asynchronous programming	1	Online readings
Using Web API	1	Online readings
Data Layer: SQLite and Room	1	11
Firebase Cloud Services: Firestore, Cloud Storage & Firebase Authentication	1	Online readings
Work Manager and Notification Manager	1	27
Camera and Google Maps	1	15, 16
Review & Exams	1	

Recommended Textbook

Android Programming: The Big Nerd Ranch Guide

5th Edition, 2022



Plenty of online resources will be provided

How to get the textbook online

- Visit https://www.oreilly.com/member/login/
- Login using your QU email and password
- Access the book @ https://learning.oreilly.com/library/view/android-programming-the/9780137645794/

Your Grade is Based on

Theory:

Quizzes:	10% (5 out of 6) - **no make-up quiz if absent**
Midterm Exam:	10% (During week 7)
Final Exam:	10% (Consult final exams timetable)
Project Phase 1:	20%
Project Phase 2:	10%

Lab:

Lab Assignments:	20% (4 out of 5)
Midterm Lab Exam:	10% (During week 7)*
Final Lab Exam:	10% (During the last Lab)*

***Students who get less then 50 pts out of 100 in the Midterm/Final Lab exam we get their project's grade reduced to half of the group grade**

How to succeed in this course….

- Do your weekly assigned readings
- **Read the slides before you come to the class**
- **Exercise a lot – study as many examples as possible**

  - Understand and enhance the examples I provide as well as the ones in the textbook and the ones in the provided resources
- **Attend and participate in class**
  - **Many of the exam questions are from the class explanation**
- Do all the assignments and project **yourself.** Actively contribute to your project.
- Seek help when needed and ask questions (and do it EARLY): During Lectures/Labs & Come to office hours

We learn swimming by swimming and we learn design and programming by practicing it!

Software we will use

- Android Studio
  https://developer.android.com/studio
- GitHub Desktop
- For modeling we will use **Visual Paradigm**

https://ap.visual-paradigm.com/qatar-university/license.jsp

- Other tools will be communicated to you as we go

GitHub will be used to deliver Slides, Examples, Assignments, and Project

https://github.com/cmps312f23/cmps312-content

Check it regularly!

Communication

- Post your technical questions to

https://github.com/cmps312f23/cmps312-content/issues

Do NOT send me by email

- To contact me do not send emails but use **Microsoft Teams** chat

- For **guidance** on technical issues come to office hours NOT by email

Important Notes

- Attendance… QU attendance policies will be enforced
  - Do not miss classes/labs
- **Start your assignments and project early!!!**
- This is a senior-level course and students are expected to learn independently as much as needed in order to complete the course requirements
  - Do not expect me to find/fix your code bugs
  - Do not expect me to find and fix your technical issues

  => I can only give you high level suggestions and guidance

No ‘Free Riding’ allowed

- ‘free riders’ (who do not contribute much) => not acceptable and not fair for hardworking students
  - You must actively contribute to your project and do your ultimate best to deliver the best possible results
  - Otherwise you will be asked to do the project alone
  - **Report free-riders early**

Plagiarism / Cheating

- “Getting an unfair academic advantage"
  - Using other people's work as your own
  - Not doing your assignments yourself
- All the code you submit must be your own
    - Only exception: Code I have provided or explicitly authorized
    - **NO** code you have found on the web. **NO** sharing with others.
- **Do your homework and project yourself**
  - Do NOT copy from each other or from the Internet - **I will know it!**
  - You can be picked-up randomly to explain your implementation
  - Cheating will be treated very seriously
- Penalties START with a zero on the assignment, failing the course! and other disciplinary actions as per QU policy

To do before next class

- Install the required software: Android Studio & GitHub desktop (see announcement on Teams)
- Decide your team members and enter them in the spreadsheet on Teams
- Create your GitHub account **(firstname-quUsername)**
- Prepare any questions you might have

I wish you a fruitful and enjoyable journey!