CMPS 312 – Mobile Application Development

Syllabus and Course Admin

Dr. Abdelkarim Erradi

Department of Computer Science & Engineering

Qatar University


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Outline

- Course introduction
- Grading
- Policies

About the Instructor

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

Office hours:

- Female: **Tues 12pm to 1pm** at H07-C309
- Male: **Sun 12pm to 1pm** at H07-BL013
- 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
Dart programming essentials: Variables, control flow, functions, error handling	1	Online readings
Dart Object-Oriented Programming (OOP), classes, inheritance, mixins, collections, functional constructs (lambdas)	2	
Flutter Fundamentals: widgets, hot reload, rendering model	1	1
User Interface (UI) development: core widgets, layouts (Row, Column, Stack, Grid), styling, themes	1	3, 6, 14, 22
Displaying Lists and Handling User Input with Forms	1	9
Navigation and passing data between screens	1	Online readings
Managing App State	1	4, 19
Asynchronous programming: Futures, async/await, Streams	1	Online readings
Using Web API	1	Online readings
Local Data Persistence with SQLite	1	11
Cloud Services with Supabase: Database, File Storage & Authentication	1	Online readings
Device Capabilities: Camera, location, Google Maps integration	1	27
Background tasks & Notifications	0.5	15, 16
Review & Exams	0.5	

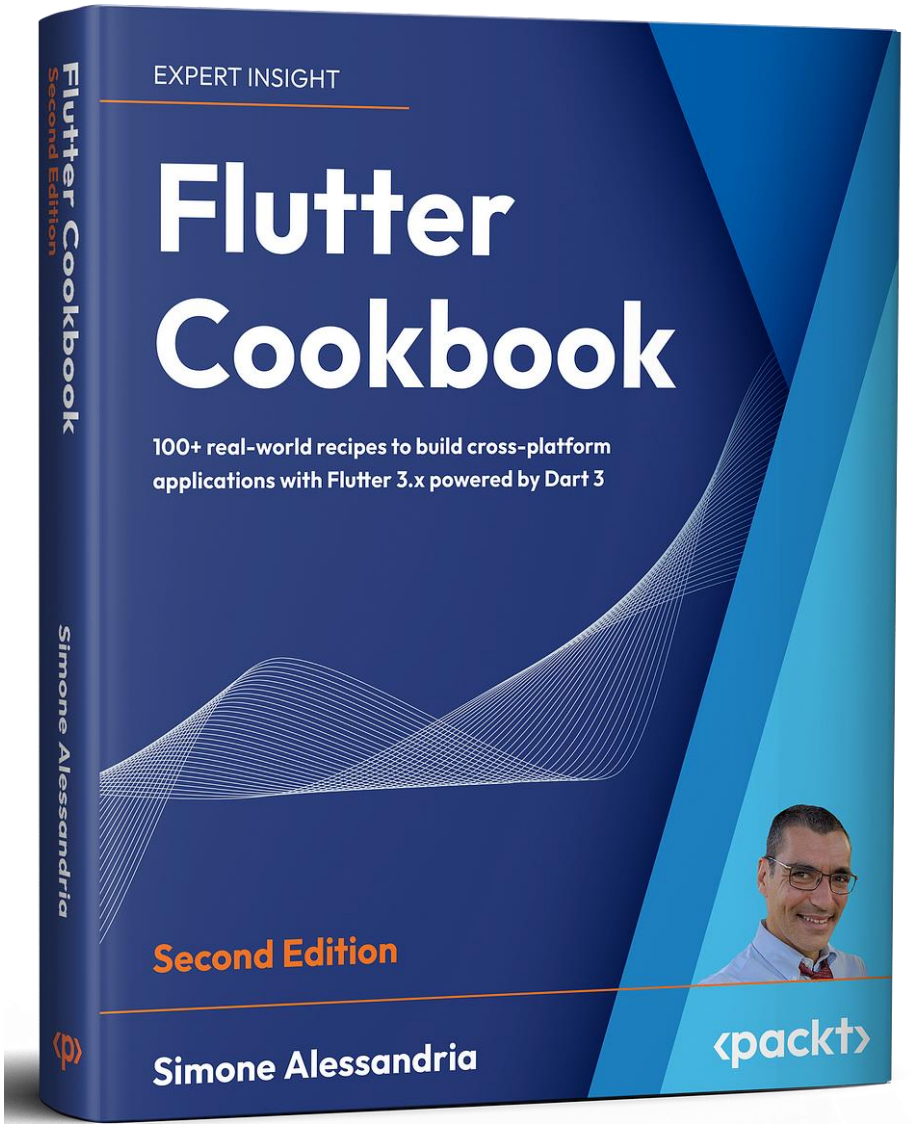
Recommended Textbook

Flutter Cookbook

2nd Edition, 2023

(freely available as OReilly eBooks using your QU login)

Plenty of online resources will be provided



Your Grade is Based on

Theory:

Quizzes:	10% (5 out of 6) - **no make-up quiz if absent**
Midterm Exam:	12.5% (During week 7)
Final Exam:	12.5% (Consult final exams timetable)
Project Phase 1:	10%
Project Phase 2:	10%

Lab:

Lab Assignments:	20% (4 out of 5)
Midterm Lab Exam:	12.5% (During week 7)*
Final Lab Exam:	12.5% (During the last Lab)*

***Students who get less then 50 pts out of 100 in the Midterm/Final Lab exam will be a clear evidence of project free-riding**

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

- VS Code with Flutter SDK and Tools

https://docs.flutter.dev/get-started/install

- 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/cmps312f25/cmps312-content

Check it regularly!

Communication

- Post your technical questions to

https://github.com/cmps312f25/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: VS Code, Flutter SDK and Tools & 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!