Mobile Computing
Overview

Overview

These slides make sure you know what's up:

What you can expect from this course.

What is expected from you.

Hello

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ECTS and effort

3 ECTS credits => 90 hours:

   14 sessions à 3 hours = 42 hours in class.

+ 24 extra hours for an integrated team project.

+ 24 hours of private studies & exam preparation.

Learning objectives: app development

Students know how to design and implement native applications for mobile devices running Android.

Students have basic knowledge of UI design guide-lines and techniques relevant for mobile app design.

Students can describe the integration of their application with a backend Web service.

Learning obj.: sensors & connectivity

Students know how to use smartphone on-device sensor APIs for motion, position and environment.

Students have basic knowledge of prototyping a peripheral IoT device with an Arduino-compatible hardware platform, sensors and actuators.

Students have basic knowledge of connectivity options like Bluetooth Low Energy (BLE).

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Dates HS20

20.09.	Introduction & App. Development 1	18.10.	Sensors & Connectivity 1
27.09.	Android Application Development 2	25.10.	Sensors & Connectivity 2
04.10.	Android Application Development 3	01.11.	Sensors & Connectivity 3
11.10.	Android Application Development 4	08.11.	Sensors & Connectivity 4
		...	

Dates HS20

15.11.	Project Kick-off
22.11.	Independent (remote) Project Work 1
29.11.	Independent (remote) Project Work 2
06.12.	Independent (remote) Project Work 3
13.12.	Independent (remote) Project Work 4

20.12.	Project Presentation Day
W52	(Vacation)
W1-4	(No class)
W5/6	Assessment (TBA)
W8	Results (on demand)

Learning objective assessment

A graded team project, due on *Presentation Day*.

A mandatory, written assessment of 120 minutes.

Counting 30% (project) and 70% (assessment).

The final grade will be a Bologna grade.

Assessment

120 minutes, closed-book, written assessment.

1 A4 sheet* personal summary is allowed.

No other material (slides, books, ...).

No communication (phone, ...).

*Both sides.

Team project

2-3 person teams, building an IoT system.

~20' presentation of the project on the 20.12.

Slides, source code, binaries, README on GitHub.

All team members are able to explain the project.

Details at the project kick-off.

Plagiarism

Unfortunately has to be mentioned, sanctions apply.

From Betrug und Plagiate bei Leistungsnachweisen:

"Wer in Arbeiten im Rahmen des Studiums Eigen-
und Fremdleistung nicht unterscheidet, wer
plagiiert, macht sich strafbar." - M. Meyer

Using 3rd-party code? Make it clear, check license.

Course materials

The official course site is TSM_MobCom on Moodle.

Slides and source code examples are on GitHub at

https://github.com/tamberg/mse-tsm-mobcom

Communication

We use Microsoft Teams to communicate.

For remote lessons via video stream.

And as a asynchronous chat.

Tools and languages

Android Studio for Android native development.

Arduino IDE for Arduino C development.

Git version control for source code.

Smartphone

Bring your own Android smartphone.

Ideally not much older than 3 years.

Android version 8.x or newer.
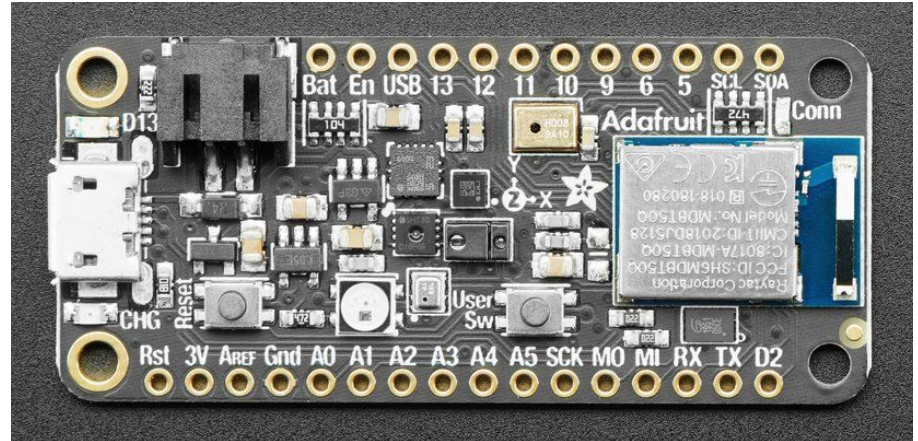
No such phone? Get in touch.

Embedded hardware

Adafruit Feather nRF52840 Sense

ARM Cortex M4 based SoC

Bluetooth Low Energy

Built-in sensors

CC BY-SA, adafruit.com

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Feedback or questions?

Join us on MSE TSM MobCom in MS Teams

Or email thomas.amberg@fhnw.ch

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Thanks for your time.