Mobile Computing Overview

Slides: tmb.gr/mc-how

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 guidelines 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).

Dates HS20

14.09.	Introduction & App. Development 1
21.09.	Android Application Development 2
28.09.	Android Application Development 3
05.10.	Android Application Development 4
12.10.	Sensors & Connectivity 1
19.10.	Sensors & Connectivity 2
26.10.	Sensors & Connectivity 3
02.11.	Sensors & Connectivity 4
…	

Dates HS20

09.11.	Project Kick-off
16.11.	Independent (remote) Project Work 1
23.11.	Independent (remote) Project Work 2
30.11.	Independent (remote) Project Work 3
07.12.	Independent (remote) Project Work 4
14.12.	Project Presentation Day
21.12.	(No class)
28.12.	(No class)
29.01. W5 & W6	Prüfungssession, genauer Termin kommt später
W12	Prüfungseinsicht

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, …).

*Double sided.

Team project

2-3 person teams, building an IoT system.

~20' presentation of the project on the 14.12.

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

See TSM_MobCom on Moodle.

Slides are available as PDFs.

Code examples on GitHub.

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.

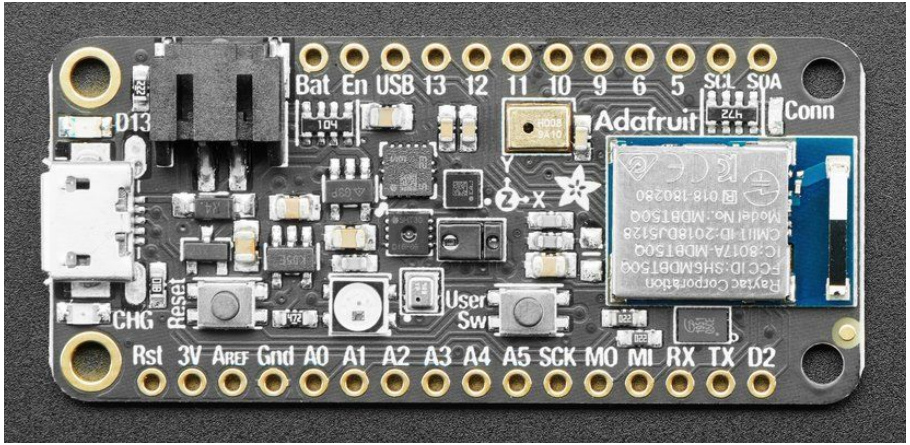
Embedded hardware

Adafruit Feather nRF52840 Sense

ARM Cortex M4 based SoC

Bluetooth Low Energy

Built-in sensors



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.