



Course Module Description

General module information

Title: Mobile and Wearable Computing

Type: Course module

Language of instruction: English

Location of the lecture: Campus Aalborg, Campus Copenhagen

ECTS points: 5 ECTS

Period: 1 September 2022 — 31 January 2023

Placement

1st semester, M.Sc. in Medialogy

Module coordinator

[Markus Löchtefeld](#) (teacher), [Dan Overholt](#) (teacher), [Nicola Walker](#) (secretary ALL), [Judi Stærk Poulsen](#) (secretary CPH)

Academic content and relationships to other modules/semesters

The formal study plan description of the module can be found here:

<https://moduler.aau.dk/course/2022-2023/MSNMEDM1224?lang=da-DK>

After a short theoretical introduction to the history and state of the art in mobile- and wearable computing, the course is meant to give students digital fabrication skills and tools needed to develop new interaction techniques for mobile and wearable computing. Students are expected to produce a practical mini project including a short scientific paper. Topics covered can include:

- Suited interaction techniques for mobile and wearable devices
- Strengths + Limitations of mobile computing
- Societal Impact of mobile and wearable computing
- Digital fabrication for wearable devices (3D Printing & Laser Cutting)
- Advanced Microcontrollers + Wireless communication
- Circuit Design (Sensors, Actuators & Mobile Displays)
- Privacy and Ethical concerns related to the development for these platforms

Objectives and learning goals

This course will focus on the building blocks for developing novel interaction techniques and services for mobile- and wearable computing, as well as discuss how the strengths and weaknesses of these can be navigated, both from a development as well as from a user experience perspective. Learning goals include knowledge of the most recent tools and techniques for designing new interaction forms, as well as innovative input/output technologies and embedded systems for use in mobile and wearable systems. By the end of the course, students should be able to build a mobile/wearable prototype based on a solid understanding of the current state of the art.

Extent and expected workload

The student workload of the course is distributed amongst different types of activities:

- 2 x Lectures
- 3 x Workshops
- Assignment: Mini-project
- Hand-in (Documentation)
- Oral examination

Students are expected to spend a significant number of hours outside the scheduled lecture and workshop hours, to work on the mini-projects and the accompanying short scientific paper. The mini project as well as the scientific paper will be developed in groups.

Preparation and participation in lectures + workshops (1.5 ECTS), mini-project (prototype + scientific publication) (3,0 ECTS), and preparation for exam (0,5 ECTS)



Pre-requisites for participation

See the module description (find the link above) for any further detail on pre-requisites.

Examination

Modality and duration: 1 Individual oral exam based on submitted project. The duration will be 15 minutes, followed by 5 minutes deliberation

Assessment: In accordance with the 7-point grading scale

Pre-approved aids: Mini-project paper and slides for presentation of same

Prerequisites for participation: None

Further detail on the exam: The mini-project will be group-based, and the topic can be chosen by the groups themselves. The project needs to include self-designed and developed mobile/wearable hardware- and software elements. To document the process and result of the mini-project, the groups will have to hand-in a short scientific paper in the format given specified on Moodle.