Linnæus University

Jnr: 2021/2380-3.1.2.2

Course syllabus

Faculty of Technology

Department of Computer Science and Media Technology

1DT305 Tillämpad Internet of Things, introduktion, 7,5 högskolepoäng

Introduction to Applied Internet of Things, 7.5 credits

Main field of study
Computer Engineering

Subject Group
Informatics/Computer and Systems Sciences

Level of classification
First Level

Progression
G1N

Date of Ratification
Approved 2019-11-08
Revised 2021-06-17 by Faculty of Technology. Prerequisites are revised.
The course syllabus is valid from spring semester 2022

Prerequisites
General entry requirements for university studies.

Objectives

After completing the course, the students should:

- have a fundamental knowledge of the Internet of Things (IoT)
- know basic programming for microcontrollers
- have a basic understanding of sensors and sensor data gathering
- have basic knowledge about IoT infrastructure and message protocols
- know about data visualisation and database
- have hand-on experience of developing an IoT project
- have basic knowledge of 3D printing

Content

The course focuses primarily on the basics of the Internet of Things (IoT). The course will show students how to build an IoT device connected to the Internet, starting from an idea to a concrete application. Students will use IoT devices with sensors programmed using MicroPython. The course is applied, which means you will be spending a lot of time working with both IoT devices and programming. Students will also learn data visualisation, data management using a database, and 3D printing. The ultimate focus of the course is to enable students develop an IoT project capable of measuring and visualising a variety of sensor data using an IoT infrastructure.

Type of Instruction

Teaching consists of lectures, workshops, and project work. Students must bring their laptops with Windows, MacOS, or Linux. In distance setting, all required sensors, electronics, and wires will have to be ordered before the course starts.

Examination

The course is assessed with the grades A, B, C, D, E, Fx or F.
The grade A constitutes the highest grade on the scale, and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail (i.e., received the grade F).

Assessment of student performance takes place through the final project work, the final report, quizzes and active participation in workshops and lectures.

Repeat examination is offered in accordance with Local regulations for courses and examination at the first and second-cycle level at Linnaeus University.

If the university has decided that a student is entitled to special pedagogical support due to a disability, the examiner has the right to give a customised exam or to have the student conduct the exam in an alternative way.

Course Evaluation

During the implementation of the course or in close conjunction with the course, a course evaluation is to be carried out. Results and analysis of the course evaluation are to be promptly presented as feedback to the students who have completed the course. Students who participate during the next course instance receive feedback at the start of the course. The course evaluation is to be carried out anonymously.

Other

Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

Required Reading and Additional Study Material

As the course is 'applied', all the resources will be provided during lectures and workshops. Besides, lecture slides will be supplemented with the theoretical contents.