Linnæus University

Jnr: 2020/2358-3.1.2.2

Course syllabus

Faculty of Technology
Department of Computer Science and Media Technology

4DV119 Tillämpad Internet of Things, 3 högskolepoäng
Applied Internet of Things, 3 credits

Main field of study
Computer Engineering, Computer Science

Subject Group
Informatics/Computer and Systems Sciences

Level of classification
Second Level

Progression
A1N

Date of Ratification
Approved by Faculty of Technology 2020-06-22
The course syllabus is valid from spring semester 2020

Prerequisites
General entry requirements at an advance level. Bachelor degree in Computer Science, or equivalent subject such as Engineering. Candidates that do not fulfill these prerequisites can have their relevant working experience validated as a prerequisite knowledge. In principle two years of relevant working experience are considered equivalent to one year of university studies at basic level.

Objectives
After completing the course, the students should:

- have a knowledge of the Internet of Things (IoT), applications
- develop applications for IoT-devices
- have an essential understanding of sensors and sensor data gathering
- understand IoT infrastructure and message protocols
- develop applications that includes data visualization and databases
- have hand-on experience of developing an IoT project

Content
The course focuses primarily on the application 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 online lectures, workshops, and project work. Students must bring their laptops with Windows, MacOS, or Linux. All required sensors, electronics, and wires has to be purchased by the student.

Examination

The course is assessed with the grades Fail (U) or Pass (G).
Assessment of student performance usually takes place through the final project work, and active participation in the workshops.

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.

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.