

SYLLABUS

IoT-based industrial automation and digitalisation 2.5 credits Z0014E

IoT-baserad industriell automation och digitalisering

Course syllabus admitted: Spring 2021 Sp 3 - Present

**DECISION DATE
2021-06-03**

IoT-based industrial automation and digitalisation 2.5 credits Z0014E

IoT-baserad industriell automation och digitalisering

First cycle, Z0014E

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	U G#	Elektroteknik	Electrical Engineering

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language and Basic knowledge to operate a modern computer (e.g., install software on a Windows computer).

Good knowledge in English equivalent to English 6.

Alternative:

Alternative to completed course can be corresponding knowledge acquired through work within the industrial sector.

Selection

Examiner

Jan Van Deventer

Course Aim

The aim with the course is to develop an understanding of Industrial IoT (IIoT) such that one can specify what they might want when discussing or contemplating the acquisition of such solution.

Upon completion of the course, the student should have:

- learned to implement a simple secure IoT solution,
- learned some of the basic implementation and challenges with IIoT,
- introductory experience to write the specifications for an IIoT solution.

Contents

The theory sections are presenting concepts that will be used to try to apply to some practice exercises. The students will be measuring different entities and transmitting the information in different forms.

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

The course is divided into three interleaved parts:

1. practical experience (serving sensor data to a local browser and to a remote cloud),
2. theoretical concepts,
3. IIoT specifications writing.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided.

- Weekly quiz
- The main assessment of the course is the presentation of the specifications of requirements to the teacher and/or peers.

Remarks

Required:

- Computer,
- STM32 Discovery kit IoT node (B-L4S5I-IOT01A) [It can be ordered from DigiKey],
- Micro USB Cable.

Literature. Valid from Spring 2021 Sp 3

Recommended literature:

Delsing, J. (Ed.). (2017). IoT Automation. Boca Raton: CRC Press

DOI: <https://www.taylorfrancis.com/books/edit/10.1201/9781315367897/iot-automation-jerker-delsing>

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Quisses and presentation	U G#	2.5	Mandatory	S21	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Syllabus established

by Jonny Johansson, HUL SRT 2021-06-03