

## **Industrial digitalization - Aspects of Industry 4.0, 2,5 HE credits**

*Industrins digitalisering - Aspekter av Industri 4.0, 2,5 hp*

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Established: 2020-06-17

Established by: Department of Engineering Science

Applies from: H20

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### **Learning outcomes**

After completing the course, the student:

- should have an understanding the concept of Industry 4.0 and its industrial impact
- be able to describe the effects of digitalisation in industry
- should have an understanding of the characteristics and concepts of IoT and IIoT
- should have ability to reflect about the differences and limitations of IoT and IIoT
- be able to describe the background to the digital transformation and future direction.

### **Entry requirements**

Undergraduate degree in Engineering (180 credits) or equivalent.

### **The forms of assessment of student performance**

Individual written assignment, individually case study presentation and written report.

### **Course contents**

Module 1: Concept of Industry 4.0

- Introduction to Industry 4.0
- Terminologies
- strategy
- Design principles
- Components
  - Internet of Things (IoT)
  - Industrial Internet of Things (IIoT)
  - Smart sensors
  - Big data analytics
  - IT security
  - Digital twin

Module 2: Industry digitalization

- Need of digitalization
- Importance of industry 4.0
- Impact in Automotive industry

- Impact in Agriculture industry
- Impact in Manufacturing
- Impact in Healthcare industry

Module 3: Internet of Things (IoT) and Industrial internet of Things (IIoT)

- Industrial processes
- Characteristics
- Devices
- Protocols
- IoT and IIoT – similarities and differences
- Use cases of the IoT and IIoT

**Other regulations**

Course grading: Failed or Passed

Course language: The teaching is conducted in English.

General rules pertaining to examination at University West are available at [www.hv.se](http://www.hv.se).

If the student has a decision/recommendation on special support due to disability, the examiner has the right to examine the student in a customized examination form.

**Cycle**

Second cycle

**Progressive specialization**

A1N - second cycle, has only first-cycle course/s as entry requirements

**Main field of study**

Automation