



Faculty of Health, Science and Technology  
Computer Science

# Syllabus

## Internet of Things - Infrastructures

<b>Course Code:</b>	DVAD72
<b>Course Title:</b>	Internet of Things - Infrastructures <i>Sakernas internet - Infrastrukturer</i>
<b>Credits:</b>	1.5
<b>Degree Level:</b>	Master's level
<b>Progressive Specialisation:</b>	Second cycle, has only first-cycle course/s as entry requirements (A1N)

**Major Field of Study:**  
DVA (Computer Science)

### Course Approval

The syllabus was approved by the Faculty of Health, Science and Technology 2021-09-01, and is valid from the Spring semester 2022 at Karlstad University.

### Prerequisites

Upper secondary level English 6 and 30 ECTS credits in Computer Science (including Computer Networking, 7.5 ECTS credits) or three years of professional experience in the information technology sector, or equivalent

### Learning Outcomes

Upon completion of the course, students should be able to describe the distinguishing features of different technological choices for IoT solutions and name suitable areas of application for them based on that description.

### Content

The course treats the Internet of Things (IoT), where communication takes place between free-standing connected units, rather than between humans and machines. The course is focused on small, resource-efficient units such as sensors for the measuring and steering of

controls and their communication. The Internet of Things involves a range of different technologies, and the course covers a number of building blocks in the shape of architectures, radio interfaces, and communication protocols such as NB-IoT, ZigBee, 433MHz, Z-Wave, LoRa, WiFi, Bluetooth, CoAP, and MQTT.

### **Reading List**

See separate document.

### **Examination**

Assessment is based on an individual hand-in assignment and an oral exam.

If students have a decision from Karlstad University entitling them to Targeted Study Support due to a documented disability, the examiner has the right to give such students an adapted examination or to examine them in a different manner.

### **Grades**

One of the grades Distinction (VG), Pass (G), or Fail (U) is awarded in the examination of the course. For Engineering students, one of the grades 5 (Pass with Distinction), 4 (Pass with Some Distinction), 3 (Pass), or U (Fail) is awarded in the examination of the course.

### **Quality Assurance**

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

### **Course Certificate**

A course certificate will be provided upon request.

### **Additional information**

The course DVAD72 cannot be included in the same degree programme as the course DVAD70.

The local regulations for studies at the Bachelor and Master levels at Karlstad University stipulate the obligations and rights of students and staff.