



Faculty of Health, Science and Technology
Computer Science

Syllabus

Internet of Things - Energy optimisation

Course Code:	DVAD75
Course Title:	Internet of Things - Energy optimisation <i>Sakernas internet - Energioptimering</i>
Credits:	1.5
Degree Level:	Master's level
Progressive Specialisation:	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 identify factors that affect energy use and give an account of how energy efficiency can be achieved in relation to the IoT.

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. For such sensors energy use is an important factor, not

only in relation to battery time, but also from an environmental perspective. The course therefore covers the influence of communication interfaces and protocols on energy efficiency.

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 DVAD75 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.