AL1523 Digitalisation and Innovation for Sustainable Development 7.5 credits

Digitalisering och innovation för hållbar utveckling

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

On 9 September 2021, the Dean of the ABE school has decided establish this official course syllabus to apply from spring term 2023, registration number: A-2021-1892.

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

The overall aim of the course is that students upon completion of the course should have sufficient knowledge of the advantages and disadvantages of digitalisation, with regard to ecological and social sustainable development in a system perspective, so that they can make conscious choices and can search additional knowledge in a well-informed way when developing new solutions.

On completion of the course, the students should be able to

- Give an account of and problematise the concept sustainable development
- Give an account of central concepts and methods that are used to describe and assess sustainability aspects of technical solutions with a system perspective
- Describe societal challenges with connection to ecological and social sustainable development
- Give an account of national and international goals for sustainable development
- Apply knowledge of sustainable development to independently suggest, describe and evaluate new solutions within digitalisation for sustainable development in a system's perspective
- By means of basic innovation theory reflect on the potential of digitalisation for sustainable development
- Cooperate in project form and based on given preconditions develop new solutions
- Present results in scientific written format and popular oral format
- Present and receive criticism orally and in writing

Course contents

The course includes lectures, seminars, project work in groups and a home exam. Lectures and seminars include presentations and discussions about challenges and goals of sustainable development in different parts of society, for example how digitalisation can contribute with solutions but also contribute to new challenges, and basic innovation theory with applications for sustainable innovation.

The project work is carried out in collaboration with a company or research project. The aim is that the students should apply knowledge and skills in digitalisation from earlier courses on different problems with connection to sustainable development. The project work is reported in a written report and orally at a final seminar.

In the home exam, the students are given the opportunity to specialise in an area of digitalisation for sustainable development of their own choice.

Specific prerequisites

45 higher education credits in Computer and information science and Electronics. Exception from Swedish 3.

Examination

- PRO1 - Project work, 5.0 credits, grading scale: A, B, C, D, E, FX, F
- SEM1 - Seminar, 1.0 credits, grading scale: P, F
- TEN1 - Home exam, 1.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Other requirements for final grade

The course is to a large extent based on attendance and active participation. Lectures, seminars and supervision of projects therefore have requirements of a certain level of attendance. All items are however designed to give the students flexibility to complete in other ways of the items where they have not been able to attend.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.