AG1815 Sustainable Development, ICT and Innovation 7.5 credits

Hållbar utveckling, ICT och innovation

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

Course syllabus for AG1815 valid from Spring 2013

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

90 hp where of 45 hp in mathematics or or information technology including knowledge corresponding to: IS1200 Coputer hardware engineering 7.5hp, ID1005 Algorithms and data structures 7.5hp and IK1203 Networks and communication 7.5 hp. In addition svenska B or corresponding is required.

Language of instruction

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

Intended learning outcomes

The purpose of the course is to give basic knowledge on sustainable development. Mainly in relation to environmental problems and social aspects. ICT-solutions (information and communication solutions) may be used to make resource use more efficient and may make possible changes in processes and practices for sustainable development, but may alos cause increased environmental problems and negative social impacts. Within the course we will reflect on different opportunities and problems related to ICT-solutions and these will be illustrated with concrete examples from the sector. There will be discussions on how sustainable development could be facilitated by ICT-solutions, and the aim is that you will later be able to use your knowledge in order to support sustainable development in your daily profession

The course goals are that the student after taking this course will be able to:

- present and problematize the concept of sustainable development, mainly in relation to environmental oblems and social aspects
- present and problematize political goals for sustainable development that are set in society
- describe and discuss different environmental and social problems in society where ICT-solutions could be useful
- on a generic level analyse environmental consequqnces of ICT-solutions/applications with a systems perspective
- understand that environmental and sustainability problems are often complex and may be inadequatley defined, and sometimes give rise to goal conflicts.
- use knowledge on sustainable development in situations where ICT-solutions are planned, developed or used, suggest ways to integrate this perspective and reflect on the potential in innovation.

Course contents

The course is based on lectures as well as discussions in smaller groups in seminars. In addition to that there is a project assignment and a computer laboration.

Lectures cover:

- The concept of sustainable development, the sustainability goals of society and societal challenges
- ICT and sustainable development - how ICT may be a positive driver for sustainable development, but also mean risks and negative impacts
- Innovations and business opportunities - examples with company perspective

- Environmetnal and sustainability assessment with systems perspective (in general and with specific applications for the ICT sector)

Seminars will be held in connection to the lectures. Students will prepare seminar discussions by reading part of the course literature ocnd prepare written assignments. In this way active participation is facilitated both at the lectures and the seminars.

The project assignment will in a concrete way relate to both ICT and sustainable development, and may be performed in collaboration with relevant companies and other actors.

Course literature

Meddelas senare

Examination

- INL1 - Assignment, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- INL2 - Assignment, 0.5 credits, grading scale: P, F
- PRO1 - Project Assignment, 4.0 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

Assignment, (INL1; 3 cr; Project assignment (PRO2; 4 cr), Assignment, (INL2; 0,5 hp)

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.