



MJ2612 Teaching and Sustainable Development 6.0 credits

Lärande och hållbar utveckling

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

Establishment

Course syllabus for MJ2612 valid from Autumn 2010

Grading scale

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

Education cycle

Second cycle

Main field of study

Environmental Engineering

Specific prerequisites

At least 100 academic credits in a program of engineering, or natural science with integrated pedagogical education.

Language of instruction

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

Intended learning outcomes

The overall aim with the course is to give an overview over Sustainable Development and to create conditions for education for Sustainable Development, ESD. Focus lies on both threats and possibilities of lifestyle and technical development on Sustainable Development, as well as Education for Sustainable Development.

After the course the student should be able to:

- Describe and analyze Sustainable Development from ecological, social and economical aspects.
- Describe the most important global and national environmental threats and their impact on ecosystems as well as explain the connection between environmental threats and our life style.
- Suggest and motivate strategies and measures, national as well as international, from a system perspective to reduce environmental problems.
- Indicate and describe means of control and tools that can be used by industry and society in order to reduce the environmental impact from a product or enterprise.
- Reflect upon the role of the engineer and teacher for a Sustainable Development.
- Describe and analyze the influence of social, economical and ecological aspects on Education for Sustainable Development. Use theories on ESD to plan, realize and evaluate education.
- Use theoretical aspects on education in order to take standpoints, discern relevant content and evaluate teaching methods.
- Search information from scientific literature and summarize it in a written report as well as making a critical study of another groups report.

Course contents

- Sustainable Development: Ecological prerequisites, definitions and concepts, method for measuring Sustainable Development, the effect of globalization on Sustainable Development.
- Threats towards and measures for a Sustainable Development coupled to case studies, the role of technology and the individual life style.
- Global and national environmental threats (climate change, Baltic sea, environmental toxins).
- Consumption society (consumption patterns, rebound effect, ecological footprints, usage of resources, transport, waste).
- The role of technology for a sustainable society (strategies, sustainable energy systems, IPP, system analysis).
- Economical and legislative means of control and tools (Swedish environmental goals, Swedish Environmental Code, emission trading, ISO 14 000).
- Pedagogical analysis and reflection on relations between education and Sustainable Development.

- Theoretical perspectives on Education for Sustainable Development.
- Curriculum studies concerning Education for Sustainable Development
- Planning, realization and evaluation of ESD.

The course will be based on project work and seminars, but also contain some lectures.

Course literature

Will be announced at the start of the course.

Examination

- SEM1 - Seminars, 1.0 credits, grading scale: P, F
- SEM2 - Seminars, 1.0 credits, grading scale: P, F
- TEN1 - Examination, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- SEM3 - Seminars, 1.0 credits, grading scale: P, F
- SEM4 - Seminars, 1.0 credits, grading scale: P, 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.

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

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.