



# AE1502 Environmental Systems Analysis for Energy and Environment 7.5 credits

Miljösystemanalys för energi och miljö

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 AE1502 valid from Spring 2012

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Technology

## Specific prerequisites

1.5 years of academic studies in engineering, planning or natural science.

- Understanding of dominating environmental and energy problems and their causes, corresponding to the course AG1808 Energi, klimat och miljö, or equivalent.

## Language of instruction

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

## Intended learning outcomes

After completing the course, the student should be able to:

- describe basic theory of environmental systems analysis and systems analysis
- describe, analyse and understand a selection of environmental systems analytical tools and their application in different decision situations in society
- describe and understand different mitigation measures for avoiding or minimising environmental impact and thereby contribute to a sustainable development

## Course contents

The course focuses on environmental systems analytical tools and include basic theory and concepts within environmental systems analysis and systems analysis. A selection of different environmental systems analysis tools are considered, that can be applied on different decision situations within e.g. policy, planning, projects, management and technologies from a sustainability perspective, with a systems analytical approach. Examples of tools that will be discussed are environmental impact assessment, strategic environmental assessment and integrated assessment, multi criteria decision aid, life cycle analysis, material flow analysis, environmental management systems, cost-benefit analysis and position analysis. The relation of the tools to different system borders, decision situations and actors will be considered, together with their range of application and limitations.

The course is given in form of lectures, seminars and laborations. In addition, a project task is included that will be reported in a seminar and in a written report. The lectures present basic theory, concepts and trends together with a discussion of the concept of a systems perspective and of the different environmental systems analytical tools. The exercises are related to the energy field and/or development projects where one or more tools are applied. The project task provides an opportunity to learn more about one or several environmental systems analytical tools.

## Course literature

To be announced before course start.

## Examination

- PRO1 - Project, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Exam, 4.0 credits, grading scale: A, B, C, D, E, FX, F

- ÖVN1 - Exercises, 1.5 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.

## **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.