



# **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.

## **Establishment**

The official course syllabus is valid from Autumn 2024. The decision is made by Director of First and Second Cycle Education: A-2024-0696. Date: 2024-03-22

## **Grading scale**

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

## **Education cycle**

First cycle

## **Main field of study**

Technology

## **Specific prerequisites**

Basic knowledge in natural resources, environment and sustainable development that corresponds to the content of the courses

AL1351 Energy, Environment and Sustainable development (4.5 credits)

MJ1508 Ecology and Environmental Effects (7.5 credits)

# 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.

# Examination

- PROA - Project, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Exercises, 1.5 credits, grading scale: P, F
- TENA - Written Exam, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN2 - Group Exercise, 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.

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.