



Faculty of Science

MVEN15, Environmental Science: Climate Change, Science and Society, 15 credits

Miljövetenskap: Klimatförändringen, vetenskap och samhälle, 15 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2010-12-07 and was last revised on 2016-12-05. The revised syllabus applies from 2016-12-05, spring semester 2017.

General Information

The course is a compulsory second cycle component of a degree of Master (120 credits) in the Master's programme in applied climate strategy.

Language of instruction: Swedish

Main field of studies

Environmental Science

Depth of study relative to the degree requirements

A1N, Second cycle, has only first-cycle course/s as entry requirements

Learning outcomes

Knowledge and understanding

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

- account for principles and methods of different methods based on life cycle analysis and discuss how and where these methods can be applied to assess the environmental impact of complex socio-economic structures, processes, products and services

- critically reflect on how decisions on environmental strategy of different actors, including public authorities and industry, can be supported by systematic analysis methods, such as life cycle analysis and its derivatives
- discuss and critically analyse general methods and key concepts of risk analysis and adaptation integration that are used in the context of climate change adaptation
- identify and discuss different types of measures to decrease climate-related risks, including preventive measures, preparedness and risk financing
- critically reflect on the links between climate change adaptation, risk management and development, discuss associated challenges and climate change adaptation from a systems perspective

Competence and skills

On completion of the course, the students shall be able to:

- identify and critically review parameters that are crucial to the quality of a life cycle analysis
- interpret the results of analytical studies of the information provided by systematic environmental assessment tools and the reliability of this information
- critically analyse the potential impact of different types of climate-related disasters and the key underlying circumstances affecting the vulnerability and capacity of individuals and societies
- apply different methods and strategies to integrate climate change adaptation in different social sectors, and be able to combine so called top-down and bottom-up approaches within the field of climate change adaptation

Judgement and approach

On completion of the course, the students shall demonstrate the ability to

- make assessments of issues of climate strategy informed by relevant disciplinary, societal and ethical aspects
- identify their need of further knowledge and take responsibility for their ongoing learning

Course content

The course deals with the climate system of Earth and its components, drivers and feedback systems, and with the natural dynamics of the climate system in different time perspectives. The large-scale natural and anthropogenic cycles of energy, carbon, water and nutrients are studied. Furthermore, the course addresses the potential impact of global climate change on nature and society. Among the topics studied are the international activities governed by the UN climate convention and other global and local initiatives and how society can reduce its emissions and adapt to the ongoing climate change. The course components are based on the students relating the climate work to their previous studies and practising generating shared views, discourses and understanding. The course includes elements of the theory of science

and ethics providing the students with tools and concepts for the integration and exercises in which the tools and the concepts are applied to the climate research material. The theoretical and ethical components specifically focus on links and balances between knowledge uncertainty, research findings and decision-making. The students are to apply and integrate their new knowledge in a final project and students with different disciplinary backgrounds will collaborate in order to achieve interaction, knowledge exchange and understanding between and for different disciplines.

Course design

The teaching consists of lectures, seminars, exercises and project work. Participation in seminars, exercises and project work and associated components is compulsory.

Assessment

The assessment is based on written assignments and project presentations throughout the course and on an oral or written exam. Students who failed the first exam opportunity will be offered an additional exam opportunity soon thereafter.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, Pass, Pass with distinction.

For a Pass on the course as a whole, students must have passed the exam, the written assignments and project presentations, and participated in all compulsory components. The final grade is determined by an aggregate of the assessed components.

Entry requirements

To be admitted to the course, students must have a first-cycle degree of at least 180 credits or an equivalent international degree. To be admitted to the programme, students must also have Swedish B and English B or the equivalent.

Further information

The selection of qualified applicants to be admitted to the course as a freestanding course will be based on the following sub-groups:

1. science and technology;
2. social studies, economics, law;
3. other. The applicants in each sub-group will be ranked in accordance with the grade on their Bachelor's degree projects

The number of places will be distributed evenly among the sub-groups.

Subcourses in MVEN15, Environmental Science: Climate Change, Science and Society

Applies from H10

1001 Climate Change, Science and Society, 15,0 hp
Grading scale: Fail, Pass, Pass with distinction