

Syllabus

for course at advanced level

Large Scale Challenges to the Climate and the Environment
Storskaliga utmaningar för klimat och miljö

**15.0 Higher Education
Credits**
15.0 ECTS credits

Course code:	MI7014
Valid from:	Autumn 2020
Date of approval:	2018-08-20
Changed:	2020-01-13
Department	Department of Environmental Science
Main field:	Environmental Science
Specialisation:	A1N - Second cycle, has only first-cycle course/s as entry requirements

Decision

Prerequisites and special admittance requirements

For admission to the course, knowledge is required equivalent to a bachelor's degree in a natural science subject, mathematics, or a bachelor's degree in engineering, as well as English 6.

Course structure

Examination code	Name	Higher Education Credits
GC01	Global Challenges	3.5
SM03	Statistiska metoder	3.5
DEL2	Environmentals System	8

Course content

The course explores the composition and function of the environment, and how natural environmental systems are perturbed by anthropogenic disturbances. The course consists of three course units:

1. Global Challenges: This unit will give you an overview of global environmental challenges and the impact on the natural environmental system from society. You will become familiar with several basic concepts like biogeochemical cycles, the hydrological cycle, and large-scale energy balances. In addition, this unit introduces ethical and philosophical issues in human-environmental interactions.
2. Statistics, research and communication tools: This unit will give you tools to evaluate environmental data
3. The Environmental System: This unit will give you an overview/review of the large-scale perturbations such as: contaminated water systems; air pollution; land use and land cover change and terrestrial ecosystems; climate change; contamination from synthetic chemicals; effects on ecosystems, organisms and human health. These perturbations will be evaluated from four perspectives: observed effects (problem description), sources, dispersion, and actions to be taken.

Learning outcomes

Upon completion of the course, students are expected to be able to:

- * Explain the Environmental System and the most important perturbations (Part 1 and Part 3)
- * Identify and analyse the and its perturbations, including mechanisms and effects (Part 3)
- * Reflect on society's opportunities to remedy the perturbations on the environmental system (Part 3)

* Apply statistical methods to evaluate environmental data (Part 2)

Education

Instruction consists of lectures, group instruction, exercises, project work, field trips. Participation in project work, field trips, and exercises and any associated integrated instruction is compulsory. In the event of special circumstances, the examiner may, after consultation with the teacher concerned, grant a student exemption from the obligation to participate in certain compulsory instruction.

Forms of examination

a. The course is examined as follows: Knowledge of Part 1 Globala utmaningar (Global Challenges) 3,5 ECTS is assessed by mandatory attendance, , and Part 2 Statistics, research and communication tools 3,5 ECTS is assessed by written reports Part 3 Miljösystemet (The Environmental System) 8 ECTS is assessed by written assignments and written exam

b. Grades will be set according to a seven-point scale related to the learning objectives of the course:

A = Excellent

B = Very good

C = Good

D = Satisfactory

E = Adequate

Fx = Fail, some additional work required

F = Fail, much additional work required

The course units Part 1 and Part 3 will be graded according to a two-point scale: Pass (G) or Fail (U).

c. The grading criteria will be distributed at the beginning of the course.

d. In order to pass the course, students must receive a passing grade on all course units and participate in all mandatory instruction.

e. Students who receive a failing grade on a regular examination are allowed to retake the examination as long as the course is still provided. The number of examination opportunities is not limited. Other mandatory course elements are equated with examinations. A student who has received a passing grade on an examination may not retake the examination to attain a higher grade. A student who has failed the same examination twice is entitled to have another examiner appointed, unless there are special reasons to the contrary. Such requests should be made to the department board. The course includes at least two examination opportunities for each course unit per year when the course is given. At least one examination opportunity will be offered during a year when the course is not given.

f. Students awarded the grade Fx are given the opportunity to improve their grade to E. The examiner decides the supplementary assignments to be performed and the pass mark criteria. The supplementary assignments will take place before the next examination session.

Interim

Students may request that the examination be conducted in accordance with this course plan even after it has ceased to be valid. However, this may not take place more than three times over a two year period after course instruction has ended. Requests must be made to the departmental board. The provision also applies in the case of revisions to the course plan (and the revisions of the course literature).

Misc

The course is part of the Master programmes in Environmental Science but can also be read as a separate course.

Required reading

The course literature is decided by the department board and published on the Department of Environmental Science and Analytical Chemistry's website at least two months before the start of the course.