

MVEA01, Environmental Science: Basic Course, 15 credits

Miljövetenskap: Grundkurs, 15 högskolepoäng

First Cycle / Grundnivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2007-03-01 to be valid from 2007-07-01, autumn semester 2007.

General Information

The course is in the first cycle and compulsory for a Bachelor of Science degree in environmental sciences.

Language of instruction: Swedish

Main field of studies

Environmental Science

Depth of study relative to the degree requirements

G1N, First cycle, has only upper-secondary level entry requirements

Learning outcomes

The aim of the course is to enable students, on completion of the course, to have acquired the following knowledge and skills

- basic knowledge of the causes of environmental problems based on basic principles and models of science understanding of the consequences of environmental damage for the health and survival of humanity and other organisms
- understanding of dynamic, abiotic processes and contexts in soil, air and water and of their impact on the conditions for human activity ability to apply simple statistical models
- ability to understand theoretical principles and their use to solve the environmental problems of material flows and human activities experience of how environmental problems are addressed in society
- ability to evaluate and analyse the implications of sustainable development understanding of how environmental problems are caused by a complex interplay between scientific, social and economic processes ability to describe the policy

instruments used at the national level to solve environmental problems with sustainable development

- ability to present and retrieve information about environmental issues ability to compile and communicate information about environmental problems in speech and writing.

Course content

Scientific approach: Basic theory of science, hypotheses and hypothesis testing
 Basic theory: Natural climatological and geological processes. Anthropogenic disturbances in the form of, for example, erosion, global heating and depletion of the ozone layer. The natural cycles of matter and energy flows. Anthropogenic disturbances in the form of, for example, eutrophication, acidification and increased ground level ozone concentration. Use of renewable and stored resources. The natural function of the ecosystem. Anthropogenic disturbances in the form of reduced biodiversity. The population issue.

Themes: Toxicology: damage caused by natural and anthropogenic toxins. Pollutants: emission and cycles of organic and inorganic environmental pollutants, bioaccumulation. Natural resources and their use. Dispersion and transformation of pollutants in soil, water and air. Environmental quality targets. Sustainable development.

Project Work: A part of the course takes place as project work in small groups. The aim of the project work is to identify essential environmental problems and present a specialised analysis of individually selected topics. Major emphasis is placed on the planning, implementation and reporting of the projects, training students in information searching, problem-solving and techniques of written presentation.

Course design

The teaching consists of lectures, laboratory sessions, field trips, study visits, group exercises and project work. Theoretical elements are mostly addressed at seminars. Participation in all components except lectures is compulsory.

Assessment

The assessment is based on a written exam at the end of the course. Students who fail to obtain a pass at the first exam will be offered a second opportunity shortly 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 laboratory reports, the written assignments and the project report, and participated in all compulsory components.

Entry requirements

General and courses corresponding to the following Swedish Upper Secondary School Programs: Biology 2, Chemistry 2, Mathematics 4, Physics 1b/1a1+1a2.

Further information

The course may not be included in degree together with Environmental Sciences Level 1, 15 credits, MVE001 or MVE101.

Subcourses in MVEA01, Environmental Science: Basic Course

Applies from H21

- 2101 Exercises (attendance and reports) and basic group work, 5,0 hp
Grading scale: Fail, Pass
- 2102 Exam and individual assignments, 10,0 hp
Grading scale: Fail, Pass, Pass with distinction

Applies from H07

- 0701 Environmental Science: Basic Course, 15,0 hp
Grading scale: Fail, Pass, Pass with distinction