Faculty of Science

MVET10, Environmental Protection, 15 credits

Miljöskydd, 15 högskolepoäng

Second Cycle / Avancerad nivå

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 a compulsory second cycle component of a degree of Master of Science (120 credits) in environmental and health protection

Language of instruction: Swedish

Main field of studies	*Depth of study relative to the degree requirements*
Environmental Science	A1N, Second cycle, has only first-cycle course/s as entry requirements
Environmental Health	A1N, Second cycle, has only first-cycle course/s as 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 different measures to prevent and remedy pollution and other negative effects on the environment and human health Ability to account for the different preventive and protective measures (filter methods) available for industrial activities, agriculture, individual drains, transport and household environments
- Ability to apply the principles of preventive environmental protection (clean technology) and different purification methods, and knowledge of the prevention and protection measures available. Ability to apply self-inspection and its implications for risk analysis and protective measures in concrete cases. Ability to minimise chemical environmental and health risks through, for example, legal

regulation and prioritisation lists, and the volume and hazardousness of the waste
- Ability to apply principles of risks to the management of chemical products and different precautionary measures Ability to identify the environmental impact of transports and propose technical protective measures, planning measures and preventive measures such as mobility management
- Ability to take stock of environmental problems in ecologically harmful activities and propose measures Ability to apply the BAT (best available technology) concept both through literature studies and practical cases
- Ability to evaluate and identify the environmental problems of agriculture and propose preventive and protective measures with regard to both livestock and agriculture, e.g. ecological agriculture
- Ability to report and communicate work with issues of environmental strategy such as waste management plans and climate strategies

Course content

The course clarifies the principles of preventive environmental protection versus so-called filter technology. Students explore different industrial processes, e.g. engineering industries, finishing work, the graphical industry, garages, hauliers, vehicle scraps, the maritime industry, aviation, the food industry, municipal wastewater plants, individual drains and different preventive measures. Different cleaning measures such as dust filters, scrubbers, water purification methods. Different methods of processing municipal wastewater are examined and the advantages and disadvantages of different methods are presented. The sludge issue is addressed, and the problems and different views of sludge management, and different regulations of sludge management are presented. Individual drains and the environmental problems associated with them are illustrated, and different cyclical solutions are discussed, both dry methods and urine diversion. The course presents conventional methods of wastewater treatment and their conditions with regard to geology and hydrology.

The hazardousness of chemical products and different methods of minimising these risks through preventive measures, choice of products, prioritisation lists, control of legal compliance and good waste management are studied. Methods to prevent waste, waste reduction methods of different kinds, different ways of managing waste and also control of compliance with waste regulations are studied. The problems of indoor environments with regard to sick buildings, damp, mould, radon and ventilation are studied. The topics studied include different examination methods, potential measures and their efficiency, noise problems including traffic noise, indoor noise and other types of noise, investigation methods and measures, air pollution control and the impact of meteorology on air quality, the spread of air pollution and different examination methods. Moreover, the impact of air pollution on the environment and health, and measures against air pollution are highlighted.

Finally, the course explores different strategic methods, using waste management planning and climate strategies as examples,

the impact of traffic and transport on the environment, and different methods to prevent and remedy the environmental impact of transport, e.g. mobility management.

Course design

The teaching consists of lectures and exercises, study visits and minor projects. Short internships in different types of organisations combined with minor projects are also included.

Assessment

The assessment is based on one or more written exams during the course. Students who have not passed the regular exam will be offered a re-sit 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, exercises and project work.

Entry requirements

To be admitted to the course, students must have 90 credits from science courses, and a basic environmental science course of 15 credits (MVE101) and 15 credits of Environmental Law (MVE104, MVE106 or MNX104).

Further information

The course may not be included in degree together with Environmental Protection MVE110.

Subcourses in MVET10, Environmental Protection

Applies from H07

0701 Environmental Protection, 15,0 hp
Grading scale: Fail, Pass, Pass with distinction