



LUND
UNIVERSITY

Faculty of Science

FYST38, Physics: Environmental Monitoring, 7.5 credits

Fysik: Miljömätteknik, 7,5 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2011-01-25 to be valid from 2011-01-25, spring semester 2011.

General Information

Language of instruction: English

Main field of studies

Physics

Environmental Science

Depth of study relative to the degree requirements

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

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

Learning outcomes

The course should give an understanding of advanced measuring technologies specifically applied to the environmental air, and how these technologies can be used to give a basis for assessments of environmental - and health risks caused by human activities. The course also aims at stimulating thinking about how different everyday human activities affect our environment and health, and to give capacity to evaluate environmental issues from a scientific point of view in worklife and public debate.

Knowledge and understanding

Upon completion of the course, the student should:

- be able to describe and understand various environmental problems with an emphasis on the air quality from a scientific perspective
- be able to formulate problems that intend to clarify risks for human environment and health which are connected to the air quality

- be able to plan an environmental measurement in a general way and choose an appropriate measurement technology tool
- be able to make a general evaluation of environmental measurement data that intend to answer the set environmental issue, and
- be able to present the results of the evaluation orally and in writing.

Skills and abilities

Upon completion of the course, the student should:

- be able to integrate knowledge about environmental measurement technology and problems concerning air quality
- possess the ability to present projects that they have implemented and discuss the results with course management and course participants at an oral presentation
- be able to implement projects and plan a presentation from within given frames, and
- be able to integrate knowledge from an extensive material for problem solving.

Assessment skills and approach

Upon completion of the course, the student should:

- have been stimulated to thinking about how different everyday human activities influence our environment and health.

Course content

- Presentation of different air quality issues and their environmental - and health effects.
- Overview of different typical measurement situations.
- Polyphase problems especially at luftföroreningsstudier.
- Physical and chemical processes at air pollutions.
- Overview of different physical and chemical measurement and analytical methods for environmental issues

The lecturers are brought from different scientific disciplines and have strong scientific anchoring. The project work in groups include an evaluation of environmental measurement data, and oral and written presentation of the evaluation.

The laboratory and the demonstration sections means that the students are being given the opportunity to work directly with high-techn research equipment or have it demonstrated.

Course design

The teaching consists of lectures, laboratory sessions, demonstrations and project work. Participation in laboratory sessions and project work and with these integrated other teaching is compulsory.

Assessment

Examination takes place in written form at the end of the course.

Students who do not pass are offered re-examinations shortly the examination.

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.

To pass the entire course approved examination, approved laboratory reports, passed project report, and participation in all compulsory parts is required.

The examination consists of two parts, a written examination where the student answers questions individually mainly of accounting nature, and a project work in groups.

To pass, it is also required that the student has participated in laboratory sessions and had all laboratory reports approved.

The final grade is decided by the exam.

Entry requirements

For admission to the course, 90 credits in natural sciences are required, of which knowledge equivalent to FYSA31 Physics 3, Modern physics, 30 credits, and English B, must be included.

Further information

Subcourses in FYST38, Physics: Environmental Monitoring

Applies from V10

1001 Environmental Monitoring, 7,5 hp
Grading scale: Fail, Pass, Pass with distinction