SH2004 Environmental Physics 8.0 credits

Miljöfysik

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for SH2004 valid from Autumn 2007

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Physics, Environmental Engineering, Engineering Physics

Specific prerequisites

Recommended prerequisites: Previous knowledge corresponding to 5A1247/SH1009 Modern Physics.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

The course objectives are to give an overview of environmental issues, on a global and local scale, and to demonstrate the application of methods and models from physics and mathematics to environmental problems. After a completed course the student should have a broad knowledge of environmental measurement techniques, be acquainted with several technical applications relevant to environmental issues, be able to formulate, analyse and solve simple technical problems relevant to the field. The course will provide training in independent project work and in oral presentation.

Course contents

theoretical methods from physics (e.g. thermodynamics, fluid dynamics, radiation physics and acoustics) on physical processes relevant to the environment. Overview of energy systems, new technologies relevant to the environment, environmental monitoring and measurement techniques. Introduction to ionizing radiation and its biological effects. Transport of pollutants in air, water and soil. Spectroscopic and geophysical measurement methods. Remote sensing. Introduction to environmental modelling and computer simulations.

Course literature

E. Boeker and R. Van Grondelle, Environmental Physics, John Wiley & Sons, New York 1995.

Lecture notes

Examination

- PRO1 - Project, 4.0 credits, grading scale: P, F
- TEN1 - Examination, 4.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Other requirements for final grade

One written exam (TENA; 4 university cr) Project work (PROA; 4 university credits) to be presented orally and as a written report.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.