Linnæus University

Jnr: 2014/2801-3.1.2

Course syllabus

Faculty of Technology
Department of Built Environment and Energy Technology

1BT015 Analysmetoder inriktning miljö, 7,5 högskolepoäng
Analytical methods environmental, 7.5 credits

Main field of study
Bioenergy Technology

Subject Group
Energy Technology

Level of classification
First Level

Progression
G1F

Date of Ratification
Approved by Faculty of Technology 2014-10-07
The course syllabus is valid from autumn semester 2015

Prerequisites
Knowledge of environmental engineering equivalent courses 1ZT006 "Environmental technology sustainable development" as well as knowledge of general chemistry equivalent courses 1KT002 and 1KT003 "General Chemical Engineering" and "Biotechnology" or the equivalent.

Objectives

After completing the course the student is expected to:

- Be well acquainted with the terminology used in laboratory work including data evaluation methods and with the chemical terminology and formulae used in conjunction with this,
- Be oriented about the environmental impact from anthropogenic emissions, how such emissions are distributed between phases and how they spread through natural mechanisms,
- Understand the significance of emissions from different sectors as well as the context in which sampling and analysis is performed,
- Possess a deep knowledge about sampling- and analysing methods relevant for environmental monitoring,
- Possess a deep knowledge about the theory behind sampling- and analysis methods relevant for environmental monitoring,
- Be able to judge the quality and precision obtained by the use of different methods,
- Be able to perform an investigation following given instructions and to present the result orally and in writing.

Content
The course covers environmental monitoring analysis methods for air, soil and water including:

- Chromatography
- Spectroscopy
- Methods based on aqueous solutions
- Particle measurements

The course includes the theory for the different methods, laboratory exercises with practical use of the instruments, sampling, sample preparation and statistical evaluation of the results.

Type of Instruction
Lectures, guest lectures and an individual project including laboratory work. The laboratory exercises are compulsory. Information on compulsory elements is given at the beginning of the course.

Examination
The course is assessed with the grades U, 3, 4 or 5.
Assessment of student performance usually takes place during special examination periods and will be done through project work, laboratory work, assignments and written examinations. Assessment will be both written and oral.

In order to pass, the objectives of the course should be achieved.

Course Evaluation
A course evaluation will be carried out and compiled after the course is completed. The compilation will be presented to the current board as well as to the students and filed.

Credit Overlap
The course cannot be included in a degree along with the following course/courses of which the content fully, or partly, corresponds to the content of this course:The course may not be included in a degree together with other course whose contents completely or partly corresponds with the contents of this course.

Overlaps totally 1BT007.

Other
Some course may entail costs that are paid by the student.
Students who successfully completed the course shall, at his request, course certificate.

Required Reading and Additional Study Material

Simonsen, F. *Analysteknik - Instrument och metoder*, Studentlitteratur 2005, 300 pp

Compendium supplied by department.