AE2304 Water and Wastewater Handling 7.5 credits

Vatten- och avloppsteknik

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

Establishment

Course syllabus for AE2304 valid from Spring 2014

Grading scale

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

Education cycle

Second cycle

Main field of study

Environmental Engineering, The Built Environment

Specific prerequisites

Proficiency in English (English B or equivalent). Bachelor's degree in the field of civil engineering, environmental engineering, or another subject with clear relevance to the course, of at least 180 higher education credits, which includes the following: Basic knowledge in mathematics for at least 20 higher education credits; Basic knowledge in numerical analysis, programming, or equivalent, for at least 6 higher education credits; General Chemistry and/or Environmental Soil Chemistry, 7.5 higher education credits; Environmental Chemistry and Risk Assessment (course AE2801), 7.5 higher education credits.

Language of instruction

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

Intended learning outcomes

After completion of the course, the students should be able to:

- explain water and material flow in society, need for sustainable development, recycling and reuse.

- analyse problems connected to water scarcity, water quality and health, based on historical perspectives and trends.

- describe requirements and formulate goals of water and wastewater handling, and distribution systems.

- apply their knowledge in treatment methods to choose an appropriate technology for water and wastewater handling as a part of urban infrastructure.

- implement their knowledge in hydraulics, chemistry, and/or microbiology in water and wastewater handling and distribution.

- understand and discuss management of water and wastewater handling and distrubution systems based on experiences and trends from urban areas in different countries.

Course contents

The course describes different systems for handling and distribution of water and wastewater, and criteria for evaluation. Principles and fundamentals of biological, chemical and separation methods. A multi-discriplinary approach is used in evaluation of systems. Study visits at plants for wastewater treatment and water treatment are included.

Course literature

Hultman, B. et al. 2000. Water use and management. L.C. Lundin (Editor), The Baltic University Programme - Uppsala University (utvalda delar)

Strypka et al. Municipal solid waste and sludge handling - Sustainability and trends.(kompendium finns som nedladdningsbar pdf)

Levlin, E. Water and waste pipes (kompendium finns som nedladdningsbar pdf)

Ytterligare kursmaterial delas ut på föreläsningar.

Examination

- ÖVN1 - Exercises, 2.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Examination, 5.0 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.

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.