AE278V Drinking Water Engineering - from Groundwater to Healthy Tap Water 7.5 credits

Dricksvattenteknik - från grundvatten till hälsosamt kranvatten

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

Establishment

Course syllabus for AE278V valid from Spring 2014

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Generally for university studies

General knowledge of water issues, hydrology etc..

Language of instruction

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

Intended learning outcomes

After completing the course, students will be able to please
- Have a thorough knowledge of the requirements of the various EU water directives, Swedish laws and regulations and WHO Water Safety Plan
- To assess an underwater wholesomeness to current knowledge about drinking water minerals and toxic substances and pathogens
- Have a good knowledge of the municipal water supply from natural and artificial groundwater
- To assess how and to what degree a drinking water affected by individual sewage treatment
- Be well oriented in different water treatment methods and their impact on water quality and mineral balance
- To determine whether a water is corrosive, which contains possible corrosion products and health risks with them, and what treatment that can prevent corrosion
- Be able to describe what drives economic, social and technological trends in the VA issues and how they affect the environment
- Be able to use project work to structured and methodical problem solving within your own field of work

Course contents

The course is focused on groundwater and a new way of looking at drinking water content, the water should not only be free from toxic levels of a range of metals, ions, toxic algae and other microorganisms, but also have a health positive content of minerals, as well as in mineral balance.
The following key areas will be addressed in the course:
Various EU water directives, the WHO Water Safety Plan etc.
Swedish laws and regulations governing water activities
Current methods of treatment - municipal water, private wells
Toxic and beneficial minerals, ions in drinking water, mineral balance.
Waterborne diseases, algal toxins, etc.
Corrosion and corrosion products. Saltwater intrusion.
Individual VA and Baltic problems.
Study
Own project related to the student's own work area / field of interest

Disposition

The course is a summer where lecturers and tutors from KTH, authorities, companies and organizations will share their knowledge and experience.

The course consists of a weekly course (about 7 days) with lectures, seminars and field trips, partly of their own work during the summer and then reported over the weekend.

Course literature

I huvudsak kompendier på svenska och engelska.

Equipment

Access to computer and the internet

Examination

- INL1 - Assignment, 1.5 credits, grading scale: P, F
- ÖVN1 - Exercises, 1.5 credits, grading scale: P, F
- PRO1 - Project Work, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Examination, 1.5 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.

Assessment is carried out successively in the form of assignments and exercises, as well as a well-executed project that, if approved, will lead to a base score. For higher grades proficient exhibited at the exam.

Other requirements for final grade

Assessment is carried out successively in the form of assignments and exercises, as well as a well-executed project that, if approved, will lead to a base score. For higher grades proficient exhibited at the exam.

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.