AE2303 Reduction of Waste-water Treatment Contribution to Global Warming 6.0 credits

Reduktion av avloppvattenreningens bidrag till global uppvärmning

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

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

Establishment

Course syllabus for AE2303 valid from Autumn 2012

Grading scale

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

Education cycle

Second cycle

Main field of study

Environmental Engineering

Specific prerequisites

The course is addressed to students studying civil engineering or environmental engineering that specialize in wastewater treatment. At least three years of academic studies. Documented proficiency in English B or equivalent.

Language of instruction

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

Intended learning outcomes

The major objective of the course is to provide the course participants with the knowledge and the practical skills that could be used in designing, managing and evaluating of modern wastewater treatment plants in order to minimize their impact on environment and on climatic changes. The specific objectives include:

- making the student to realize that the combined effect of "small" emissions from a number of wastewater treatment plants can noticeable contribute to the global environmental pollution and ultimately to global climate change and that EU-wide cooperation in this area is necessary;
- showing the students that if the commonly used wastewater and sewage sludge treatment technologies are optimized, improved or replaced with other more sustainable technologies the pollution emission to the environment can be reduced and teaching them how to achieve this;
- showing the students that implementation of sustainable management systems supported by appropriate automation, integrated control, monitoring, and computer simulation to the existing treatment processes can result in reduction of environmental pollution and teaching them how to achieve this;
- teaching the students how to evaluate and assess the wastewater and sludge treatment processes and technologies from the sustainable development standpoint.

Course contents

The course's leading topic is the reduction of wastewater treatment contribution to global warming by controlling of gas emissions from wastewater treatment and sludge processing. The course will be offered to the group of students from Italy, Poland and Sweden. The course will utilize the most effective teaching techniques with peer learning being the core didactical approach used during the course. This will be supplemented by lectures given by an international team of academic teachers and professionals in the following subjects; Global climate change, Wastewater treatment, Interactions between wastewater treatment plant and the environment, Monitoring, control and automation at wastewater treatment plants, Integrated control of wastewater systems, Environmental impact assessment, Sustainable environmental management.

Course literature

Kursmaterialet delas ut vid föreläsningar.

Examination

- PRO1 - Project Work, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- SEM1 - Seminar, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Examination, 3.0 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.

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.