KH1242 Sustainable Development and the Chemical Engineer 6.0 credits

Hållbar utveckling med kemiingenjören

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

Establishment

Course syllabus for KH1242 valid from Autumn 2012

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Completed upper secondary education including documented proficiency in Swedish corresponding to Swedish B, and English corresponding to English A. For students who received/will receive their final school grades after 31 December 2009, there is an additional entry for mathematics as follows:

documented proficiency in mathematics corresponding to Mathematics A.

And the specific requirements of mathematics, physics and chemistry corresponding to Mathematics D, Physics B and Chemistry A.

Language of instruction

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

Intended learning outcomes

The purpose of this course is to help you:

- Gain greater knowledge of the various activities in which the engineer as one of several participants deals with environmental, economic and social affairs aiming at a sustainable development.
- Gain a greater understanding of the necessity to engineer withherability to influence nature adopts an approach in which the precautionary principle prevails.
- Understand how products and services can be developed in order to better respond to a sustainable society.
- Develop your ability to analyze a product or service in a structured and methodic way and to propose improvements from an environmental perspective.

The objectives of the course:

After the completed course, the student should be able to:

- Describe the changed environmental aspects of nature and society and how they gave rise to different environmental impacts during the past half-century.
- Develope the concept of Sustainable development by relating to ecological, economic and social aspects.
- Show how the laws, regulations and instrumentsare used in environmental contact between the chemical engineer and authorities.
- Provide examples of system effects of cleaner production strategies in comparison with "end of pipe"-action from a sustainability perspective.
- Find and compilerelevant data on materials and chemicals to prevent environmental damage, as well as protect from damage of their own and others work environment.
- Use a system analytical method on a product or a service and propose environmental improvements.
- Interpret an environmental text and make your own assessments of the text from a sustainability perspective.

Course contents

Environmental effects:

Ecological foundations

Localas well asglobal effects

Effects related to chemicals management

International and national instruments:

Sustainable development, in a broader perspective

International environmental cooperation

National laws and instruments

Actions in Sustainable development strategies:

Strategies for cleaner production

Cycles

Sustainable technology development

Sustainable development work in practice:

Searching in chemicaland environmental databases

Systematic work with the collection and assessment of product or service

Environmental Management Systems

Exercise, making a value judgment:

Sustainable development related text review of newspaper article

Course literature

Miljöi ett företagsperspektiv, Antonsson et al, Prevent förlag 2007, Upplaga 3:1

Föreläsningsanteckningar/Lecture notes

Examination

- INL1 - Home Assignments, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Assignments, 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.

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.