



KE2130 Renewable Fuel Production Processes 7.5 credits

Förnybara bränslen - produktionsprocesser

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

Establishment

Course syllabus for KE2130 valid from Autumn 2019

Grading scale

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

Education cycle

Second cycle

Main field of study

Chemical Science and Engineering, Chemistry and Chemical Engineering

Specific prerequisites

At least 150 credits from grades 1, 2 and 3 of which at least 110 credits from years 1 and 2, and bachelor's work must be completed, within a programme that includes: 75 university credits (hp) in chemistry or chemical engineering, 20 university credits (hp) in mathematics and 6 university credits (hp) in computer science or corresponding.

Language of instruction

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

Intended learning outcomes

The general aim of the course is to develop the students' skill in analysing and in a creative way solving problems related to process chemistry. The starting point for the course is the raw materials, including renewables as well as fossil materials, and it then continues via the process system to products and side products, energy use and the placing of the process in the regional and global surroundings.

After completion of the course the student should be able to:

- Identify important chemical and chemical engineering process steps in industrial applications for production of renewable fuels. (PRO1, TEN1)
- Compare and judge different raw materials for production of a certain fuel, considering environmental and safety issues. (PRO1, TEN1)

Course contents

The course describes a number of processes for the production of renewable fuels. In lectures, and in a visit to an industrial process, more traditional processes as well as new types of processes in the technical front line will be treated. Important chemical, chemical engineering and biochemical process steps are discussed in detail in the course and relevant process schemes are suggested. Different types of reactors, optimisation of operating parameters etc., and different opportunities for process integration when producing renewable fuels are discussed.

The course includes a project assignment in which the students in groups investigate different process systems and present their work orally and as a written report.

Examination

- PRO1 - Project, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 4.5 credits, grading scale: P, 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.

To pass the course the student must pass the examination (TEN1) and pass the project work. The final grade is given from the results of the written exam and the evaluation of the project work. In the project, a mandatory seminar is included.

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.