



KE2325 Process Design for Industry and Society 15.0 credits

Processdesign för industri och samhälle

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

Establishment

Course syllabus for KE2325 valid from Autumn 2015

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Chemical Science and Engineering

Specific prerequisites

_Admission requirements for programme students at KTH:

_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.

_Admission requirements for independent students:

_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.

Documented proficiency in English corresponding to English B.

Language of instruction

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

Intended learning outcomes

The course has two main goals. The first is to make the students familiar with how to work in a project organisation, common in industry and administration. The method for this is to carry out a study estimate of a new, realistic idea in a project group while working in a project organisation. The second goal is to apply a lot of the basic technical knowledge from earlier courses in the curriculum.

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

- Describe the most important aspects of working in a project organisation
- Be able to work in a project organization when carrying out smaller or larger tasks.
- Describe the different levels of precision relevant for the investigation of a project idea.
- Carry out an investigation on the study estimate level
- Identify the information needed for the completion of the study estimate
- Assess the information with reference to relevance, accuracy and its impact on the technical and the economical outcome of the study estimate.
- Plan and gather the technical data required for the carrying out of mass and heat balances describing the actual project idea.
- Identify a relevant system boundary for the technical analysis
- Identify and collect the economical data that is needed for an economical analysis on the study estimate level.
- Identify a relevant system boundary for the economical analysis
- Show, by the writing of a technical report that they know the standard way of writing technical reports (style, lay-out and organisation)
- Interpret, value and comment on, both the technical and the economical results of the study estimate.
- Justify the conclusions drawn
- Defend the results against external criticism
- Propose how the results may be used
- Show, by giving an oral presentation, how the results of an investigation should be presented to a certain audience (specified)

Course contents

Discussions on relevant items concerning work in a group, work in a project and the art of making a study estimate. System analysis. Optimization. Cost engineering. Design and sizing

of systems based on chemical processes. Sensitivity analysis. Constructing material. Safety issues. Environmental aspects.

Course literature

The course literature will be announced closer to the course starts.

Examination

- PRO1 - Project, 15.0 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.

Other requirements for final grade

Passed project (PRO1; 15 credits)

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.