LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Introduktion till kemiteknik
Introduction to Chemical Engineering

KETA05, 7,5 credits, G1 (First Cycle)

Valid for: 2023/24
Faculty: Faculty of Engineering, LTH
Decided by: PLED B/K
Date of Decision: 2023-04-18

General Information

Main field: Technology.
Compulsory for: K1
Language of instruction: The course will be given in Swedish

Aim

Chemical engineers, with their insight into chemistry as well as technology, can work in a whole range of different areas, e.g. design of processes for production and purification of pharmaceuticals, cost-effective and environmentally efficient production of chemicals and fuels from renewable raw materials, the development of energy efficient and sustainable methods to produce biomaterials, etc.
The aim with this course is
• to give an understanding of chemical engineering as a subject
• to give an introduction to how industrial processes are constructed
• to give an introduction to sustainable development in a chemical engineering perspective
• to introduce project work.

Learning outcomes

Knowledge and understanding
For a passing grade the student must

• be able to describe the design of an ordinary chemical process orally and in a written report
• be able to discuss flow of mass and energy in an industrial process on a basic level.

Competences and skills
For a passing grade the student must

• be able to describe an industrial process graphically by creating a simplified process flow diagram
• be able to give a general account of the function of some basic unit operations
• be able to write a plain report including source referencing and a list of references
• be able to demonstrate ability to teamwork.

Judgement and approach
For a passing grade the student must

• orally as well as in writing, be able to discuss the conditions of the process industry in terms of raw material/products/ by-product, resource and energy efficiency, and economy.

Contents

Processdesign: Units of process flow diagrams. Introduction to reactions and separation processes. Basic material balances.

Industrial processes: Principles of chemical engineering. How industrial processes are constructed. Study visit.

Sustainable development: Introduction to green chemical engineering. Renewable and finite resources.

Tools: Information retrieval and use of library databases. Oral and written communication.

Examination details

Grading scale: UG - (U,G) - (Fail, Pass)
Assessment: Active participation in group work and group discussions. Assignments, written reports, peer review, oral presentation and opposition.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Parts
Code: 0114. **Name:** Process Design.
Credits: 1. **Grading scale:** UG. **Assessment:** Active participation in group work and group discussions. Approved assignments.
Code: 0214. **Name:** Industrial Process.
Credits: 4. **Grading scale:** UG. **Assessment:** Active participation in group work and group discussions. Active participation in weekly project meetings. Exercise in literature retrieval. Study visit. Approved written report and peer review.
Code: 0314. **Name:** Sustainable Development.
Credits: 2,5. **Grading scale:** UG. **Assessment:** Active participation in group work and group discussions. Approved written abstract, oral presentation and opposition.

Admission

The number of participants is limited to: No
The course overlaps following course/s: KKK060, KETA01

Reading list

- Murphy, Regina M: Introduction to Chemical Processes, Principles, Analysis, Synthesis. McGraw-Hill, 2007, ISBN: 007-125429-3.

Contact and other information

Course coordinator: Hanna Karlsson, hanna.karlsson@chemeng.lth.se
Course homepage: https://www.ple.lth.se/en/