Linnæus University

Jnr: 2017/599-3.1.2.2

Course syllabus

Faculty of Technology
Department of Built Environment and Energy Technology

1KT002 Kemi för ingenjörer, 7,5 högskolepoäng
Chemical Engineering, 7.5 credits

Main field of study
Chemical Engineering

Subject Group
Energy Technology

Level of classification
First Level

Progression
G1N

Date of Ratification
Approved 2014-10-07
Revised 2017-01-26 by Faculty of Technology. Review of literature
The course syllabus is valid from autumn semester 2017

Prerequisites
General entry requirements and Chemistry 1, Mathematics 3c, Physics 2 or Chemistry A, Mathematics D, Physics B (Field-specific entry requirements 8/A8).

Objectives
After completing the course the student is expected to:

- Be well acquainted with chemical nomenclature and formulae,
- Understand the fundamental properties with chemical compounds; their chemical structure, their physical properties and phase changes,
- Understand and be able to describe chemical reactions from their thermodynamic, kinetics and equilibrium,
- Be able to perform laboratory work independently,
- Be able to judge the quality and precision with experimental methods and results,
- Be able to present, orally and in writing, methods and results used in or resulting from laboratory work.

Content
The course consists of 2 modules.

Module 1 Chemical Engineering 1 6 credits
The module contains the following elements:

- Concepts in chemistry and nomenclature
- Chemical bonds and structures
- States of aggregation, properties and phase changes

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- Chemical reactions:
- Formulae and stoichiometry
- Thermodynamics
- Kinetics
- Equilibria
- Acids and bases
- Electrochemistry
- Water chemistry
- Fundamentals of organic chemistry

- Nomenclature
- Functional groups and structures
- The chemical reactions of organic compounds

Module 2 Chemical Engineering 2 1.5 credits
The module contains the following elements:
This course comprises the laboratory exercises connected to the theory from course 1.

Type of Instruction
Lectures, exercises and laboratory work. The laboratory exercises are compulsory. Presentations of laboratory results and exercises, other compulsory elements will be communicated at the beginning of the course.

Examination
The course is assessed with the grades U, 3, 4 or 5.
The final grade is assessed by weighing the ratings on Module 1 and Module 2 during performances, so that good performance in module 2 can raise the overall rating. Assessment of student performance usually takes place during special examination periods and will be done through project work, laboratory work, assignments and written examinations. Assessment will be both written and oral.

In order to pass, the objectives of the course should be achieved.

Course Evaluation
A course evaluation will be carried out and compiled after the course is completed. The compilation will be presented to the current board as well as to the students and filed.

Credit Overlap
The course cannot be included in a degree along with the following course/courses of which the content fully, or partly, corresponds to the content of this course:The course may not be included in a degree together with other course whose contents completely or partly corresponds with the contents of this course.

Overlap to about 50% rate 1KT001.

Other
Some elements of the course may entail costs defrayed by the course participant. Students who successfully completed the course shall, at his request, recieve course certificate.

Required Reading and Additional Study Material
Required reading
Atkins, Jones, Laverman *Chemical principles - The quest for insight* W .H. Freeman, latest edition, approximately 1000 pp, loading instructions are provided.