Organic Chemistry 2

Programme course

12 credits

Organisk kemi 2

NKEB04

Valid from: 2017 Spring semester

Determined by
Board of Studies for Chemistry, Biology and Biotechnology

Date determined
2017-01-25

Main field of study
Chemistry

Course level
First cycle

Advancement level
G1X

Course offered for
- Chemistry, Bachelor´s Programme
- Chemical Analysis Engineering, B Sc in Engineering
- Chemical Biology, Bachelor's Programme

Entry requirements
Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites
General Chemistry and Organic Chemistry

Intended learning outcomes
The course intends to give the student a broader and deeper understanding of organic chemistry. After completion of the course the student shall have the following skills:

- Explain the properties and reactivity of organic compounds related to structure
- Account for reaction mechanisms
- Describe methods for transforming organic compounds
- Explain/account for the outcome of reactions
- Describe and plan simple synthesis
- Basic knowledge of spectroscopic techniques for structure determinations and interpretation of simple spectra and data
- Use common laboratory techniques and methods for separation

Course content

- Structure, chemical and physical properties of organic compounds
- Conformations and stereochemistry
- Chemical reactions such as substitution, elimination, addition, oxidation and reduction are treated in the aspect of functional groups
- Transformation of molecules in both synthetic and biological systems
- Reaction mechanisms, reactive intermediates, energy profiles and kinetics
- Planning of synthesis and synthetic strategies
- Organic spectroscopy, primary Infrared and Nuclear Magnetic Resonance
- Carbohydrates and other natural products are studied along with biological applications
- Knowledge of safety risks are included
- Organic synthesis, separation methods and chromatography are practiced

Teaching and working methods

The theoretical part consists mainly of lectures. The lessons include problem solving towards reaction mechanisms. The experimental part consists of organic reactions and synthesis correlated to the theoretical part of the course. Special laboratory facilities are needed.

Examination

TEN1	Written examination	7.5 credits	U, 3, 4, 5
LAB1	Laboratory work	4.5 credits	U, G

The problems in the written examination tests how well the student has reached the learning goals. To pass the laboratory course the student must attend the laboratory classes, hand in written reports and pass the written test

Grades

Four-grade scale, LiU, U, 3, 4, 5

Other information

Supplementary courses: Organic Chemistry - Molecular Design.

Department

Institutionen för fysik, kemi och biologi

Director of Studies or equivalent

Magdalena Svensson

Examiner

Gunilla Niklasson

Education components

Preliminary scheduled hours: 124 h
Recommended self-study hours: 196 h

Course literature

Solomons, Fryhle, Snyder, Organic Chemistry. Kompendium och laborationsmaterial från institutionen.

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.