

Physical-Organic Chemistry

Programme course

6 credits

Fysikalisk-organisk kemi

NKED14

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

Second cycle

Advancement level

A1X

Course offered for

- Organic Synthesis and Medicinal Chemistry, Master'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

Organic Chemistry, Master

Intended learning outcomes

The course is a continuation in organic chemistry and has the intention to give the student a profound knowledge in molecular structure, chemical bonding, quantum chemistry etc. This knowledge is applied in chemical reaction mechanisms and in spectroscopic methods. After studies well learned the student will have proficiency in:

- understanding physical-organic relationship between structure and reactivity
- identifying intermediate structures and explaining reaction procedures and mechanisms
- evaluating experimental tools to obtain information to confirm or reject a reaction mechanism
- explaining pericyclic reactions, rearrangements, radical and carben reactions.
- analysing laboratory obtained data from reactions and structures from given instructions with NMR and basic computer modelling.

Course content

Detailed survey on some central organic reaction mechanisms, giving knowledge on the effect of structure and reaction media on reactivity. Methods to study chemical reaction mechanisms. Symmetry-controlled reactions and reactions with reactive intermediates.

Teaching and working methods

The theory is taught in lectures, lessons and laboratory work.

Examination

LAB1	Laboratory work	2 credits	U, G
TEN1	Written examination	4 credits	U, 3, 4, 5

To pass the laboratory course practical performance and approved reports is required

Grades

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

Other information

Supplementary courses: Advanced Organic Synthesis.

Department

Institutionen för fysik, kemi och biologi

Director of Studies or equivalent

Magdalena Svensson

Examiner

Peter Konradsson

Education components

Preliminary scheduled hours: 50 h

Recommended self-study hours: 110 h

Course literature

Clayden, Greeves, Warren and Wothers; Organic Chemistry. 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.