



FCK3116 Molecular Structure and Dynamics by NMR Spectroscopy in Solution State 7.5 credits

Molekylär struktur och dynamik med NMR-spektroskopi i lösning

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

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for FCK3116 valid from Spring 2022

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Eligible for studies at the third-cycle level.

Language of instruction

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

Intended learning outcomes

Upon completion of the course the doctoral student should have the knowledge and ability to:

- describe the principles of NMR methods with regard to their advantages and limitations
- analyze NMR spectra, interpret and use the relationship between the spectral parameters and the molecular structure
- design strategies for analyzing and solving structural problems
- analyze and explain the effects of molecular dynamics, such as chemical exchange

Course contents

- Fundamental principles of NMR spectroscopy
- Spectral parameters (chemical shift, couplings)
- Relaxation, polarization transfer experiments, nuclear Overhauser effect (NOE)
- 2D-NMR spectroscopy
- Protocols for routine structural determination
- Dynamic NMR spectroscopy

Examination

- TEN1 - Home exam, 7.5 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.

Other requirements for final grade

To pass the course, the student must participate in at least 80% of the tutorials and 80% of the lectures. Participation in the laboratory practice and the oral presentation at the final seminar is mandatory.

Transitional regulations

If the examination form is changed, the student will be examined according to the examination form that applied when the student was admitted to the course. If the course is completed, the student is given the opportunity to be examined on the course for another two academic years.

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.