



SLUkurs

Syllabus

PNSo144 Practical NMR course in structural analysis, 2.0 credits

Syllabus approved

2016-12-11

Subjects

Chemistry

Education cycle

Third cycle

Grading scale

Pass / Failed

The requirements for attaining different grades are described in the course assessment criteria which are contained in a supplement to the course syllabus. Current information on assessment criteria shall be made available at the start of the course.

Language

English

Prior knowledge

The course is primarily intended for PhD students within the SLU Graduate School Organism Biology, but will be open for all interested PhD students and researchers if space allows.

Objective, including learning outcomes

The objectives of the course are:

- To introduce the students to the use of NMR spectroscopy to solve the chemical

structure of (small) biomolecules.

- To introduce the students to the use of the NMR spectrometers available at the dept. of Chemistry and Biotechnology.

By the end of the course, the students will have a library with a basic set of NMR experiments (including one-dimensional proton, carbon, phosphorus and two-dimensional proton-proton, proton-carbon experiments) that they should be able to use for investigating scientific problems in their research field.

Content

The course aims to provide a hands-on experiment approach of structural analysis by NMR spectroscopy.

The course will start with introductory lectures about the principle of NMR spectroscopy and the application of NMR in structural analysis of biomolecules. Subsequently, the students will be assigned a small project aimed at performing NMR experiments and analyzing assigning the data in order to determine the structure of the molecule investigated. The students will also be introduced to the NMR techniques used to study molecular interactions, drug screening and metabolomics. Each student will have the possibility to bring their own sample and to analyse it (if feasible, regarding complexity of the sample and time of analysis). The course will consist of one intensive week of studies. Additionally, one day for literature survey before and one day for finalizing the report after the scheduled schema will be required.

NMR analysis of large proteins or nucleic acids is not included in the course

Requirements for examination

Attendance at all scheduled activities during the course week and approved individual written report.

Additional information

This course is given as a postgraduate course within the SLU Graduate School in Organism Biology. The number of students will be limited to 10.

Responsible department

Department of Molecular Sciences