Kursnamn på svenska: Tillämpad avancerad NMR-Spektroskopi
Swedish course title

Kursnamn på engelska: Applied advanced NMR Spectroscopy
Englisk course title

Omfattning (högskolepoäng): 5
Higher education credits

Undervisningsspråk: engelska
Language of instruction

Rekommenderade förkunskaper
Recommended prerequisites
NMR Spectroscopy I

Kursens syfte och mål
General course objective/s and learning outcomes
After completion of the course the participant should:

- Be familiar with the function and use of contemporary pulse sequences for high resolution NMR spectroscopy for applications in organic, polymer, inorganic and biochemistry
- Be able to optimize both NMR experiment setup and processing of NMR data
- Be able to choose and interpret suitable NMR experiments to study molecular interactions involving small as well as macromolecules

Kursinnehåll
Course contents
Processing of NMR data: Reference deconvolution, linear prediction, J-doubling
Models describing NMR experiments: Magnetization, polarization, vector model, coherence.
Pulse sequences: NMR hardware, elements of pulse sequences, optimization of pulse sequences.
Homonuclear and heteronuclear 2D NMR experiments: Optimization of routine experiments, non-uniform sampling.
Selective experiments, solvent suppression with e.g. digital filtering, presaturation, selective excitation schemes.
Molecular interactions: Measurement of self-diffusion (DOSY), transferred NOE, saturation transfer difference and related techniques.
Dynamic NMR: Fluxionality, coalescence, full lineshape fitting, EXSY.
Polymer NMR: molecular weight, stereochemistry, copolymers

Undervisning (kursens uppläggnings)
Instruction (course structure)
Seminars, theoretical and practical exercises, lab reports. Focus is on the practical use of state of the art NMR instrumentation.
Examination
Assessment (form of examination)
Written examination at the end of the course, lab reports, group projects

Huvudansvarig institution: Institutionen för kemi - BMC
Department with main responsibility

Kontaktperson/er (namn, e-postadress):
Contact person (name, e-mail address)
adolf.gogoll@kemi.uu.se

Kurs datum/period: Period 3, 2019
Course dates/period

Antal platser: 10
Maximum number of participants

Anmälan om antagning till kursen ska skickas till
Application for admission to the course is to be sent to
adolf.gogoll@kemi.uu.se

Skicka anmälan senast: 2018-12-21
Submit application not later than

Målgrupp/er (om möjligt, specificera ämnen/inriktningar)
Target group/s (specify, if possible, subject/specialization): PhD students in organic, polymer, inorganic
and biochemistry with basic knowledge of NMR spectroscopy (corresponding to NMR
I, 1KB469)