Name of the course	**Principles and applications of NMR spectroscopy**
Number of instruction hours	20
Outline of course/module content	Principlesofnuclearmagneticresonance. Spinandresonance. Thevector model. NMR parameters: chemicalshift, scalaranddipolarcouplings, relaxation. Time andfrequencydomain. NMR spectrometers. Spinsystems. One-dimensionalmultipulsetechniques: APT, INEPT, DEPT, PENDANT. Two-dimensionalcorrelationtechniques: COSY, DQCOSY, TOCSY, HMQC, HSQC, HSQC-TOCSY, HMBC. Spectralediting. Selectivetechniques. NuclearOverhausereffect: NOESY, ROESY, trNOESY. Applicationof NMR techniques for determinationof 2D structureoforganicandbiomolecules. NMR inconformationalanalysis. Modern NMR techniques for studyingligand-receptor interactions. Applicationofhyphenated LC-NMR techniqueinmixtureanalysis. Solidstate NMR: magicanglespinningandcross-polarization, CPMAS-NMR. Applicationof CP-MAS inpolimorphanalysis. The role of NMR inmodernpharmaceutical, oilandfoodindustry.
Description of instruction methods	lectures, exercises
Description of course/module requirements	seminars, written and oral exam