CH-601(y)

# Basic and advanced NMR - Level 1 B (Sion)

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| Cursus | Sem. | Type |
|---|---|---|
| Chemistry and Chemical Engineering | | Opt. |

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|---|---|
| Language of teaching | English |
| Credits | 2 |
| Session | |
| Exam | Oral |
| Workload | 60h |
| **Hours** | **40** |
| Courses | 20 |
| TP | 20 |
| **Number of positions** | **12** |

## Frequency

Every year

## Remark

Next time Fall 2022 (block)

## Summary

Basic theoretical and experimental aspects of NMR. Students will be familarized with modern NMR spectrometers.

## Content

Basic theoretical and experimental aspects of NMR will be taught. Students will be familarized with modern NMR spectrometers (shimming, locking, tuning, pulse length determination etc). Furthermore they will learn basic NMR experiments: 1H and 13C NMR, different decoupling schemes, relaxation measurements, spin echo techniques, coherence transfer experiments (INEPT), etc. NMR of quadrupolar nuclei and of nuclei with low sensitivity will be treated. The primary intention is to teach PhD students and post-docs so that they can benefit from the NMR spectrometers available at EPFL, and to give them a sound foundation in NMR for various applications in organic and inorganic chemistry. PhD students and post-docs who have followed the course successfully should be able to perform standard NMR experiments independently. They should also be able to help colleagues in various research groups who wish to use NMR.
Passing the theoretical and practical exams will give 2 credits to PhD students.

## Keywords

NMR

## Learning Prerequisites

### Recommended courses

Résonance magnétique nucléaire(3rd year course by G. Bodenhausen) or equivalent

## Assessment methods

2021: oral exam via Zoom