Course Outline

Proposed course name: Basics of Solid-state NMR Spectroscopy
Course number: 9581T
Planned: Winter 2019

Instructor: Yining Huang
Email & tel: yhuang@uwo.ca, ext 83122
Schedule: 2.5 hrs/week
Web:

Target audience: graduates in chemistry, engineering

Pre-requisites: none

Topics: Solid-state NMR

Solid-state NMR (SSNMR) spectroscopy is a powerful technique for structure determination in solids and characterization of various materials ranging from crystalline solids to amorphous phases. It provides both structural and dynamic information complementary to that obtained from X-ray diffraction based methods. However, compared to solution-state NMR, performing NMR experiments in solids and interpretation of SSNMR spectra are more difficult.

In this course, the nuclear spin interactions that significantly affect the appearance of SSNMR spectra will be discussed. Several SSNMR experiments commonly used for materials characterization will also be introduced. The course aims at helping the students who are interested in using SSNMR as a tool for their research. The emphasis will be on how to use SSNMR to solve problems, rather than the rigorous theory behind.

Special:

Material:

Practical requirements:

Helpful reference material:

Evaluation: presentation (20 min) 50%; Essay 50%

The fine print - University guidelines on various issues:
The UWO Senate Academic Handbook has specified that the following points should be added to all course outlines:
A. Prerequisites:

B. Medical/Compassionate Excuses: Students missing work for valid medical or other reasons are governed by the regulations https://studentservices.uwo.ca/secure/index.cfm

C. Student Accessibility Services (SAS): Western is committed to achieving barrier-free accessibility for all its members, including graduate students. As part of this commitment, Western provides a variety of services devoted to promoting, advocating, and accommodating persons with disabilities in their respective graduate program. Graduate students with disabilities (for example, chronic illnesses, mental health conditions, mobility impairments) are encouraged to register with Student Accessibility Services, a confidential service designed to support graduate and undergraduate students through their academic program. With the appropriate documentation, the student will work with both SAS and their graduate programs (normally their Graduate Chair and/or Course instructor) to ensure that appropriate academic accommodations to program requirements are arranged. These accommodations include individual counselling, alternative formatted literature, accessible campus transportation, learning strategy instruction, writing exams and assistive technology instruction. For more information, see http://www.sdc.uwo.ca/ssl/

E. Academic Offences: Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site: http://www.uwo.ca/univsec/handbook/appeals/scholastic discipline undergrad.pdf

F. Plagiarism: All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (http://www.turnitin.com).

G. Support Services: Support is available from the Registrar: http://www.registrar.uwo.ca, via the university students council (http://westernusc.ca/services/) and at Student Development Services (http://www.sdc.uwo.ca/).

H. Mental or Emotional Health: Students who are in emotional/mental distress should refer to Mental Health@Western http://www.uwo.ca/uwocom/mentalhealth/ for a complete list of options about how to obtain help.