

Molecule and surface characterization I

 **ECTS**
3 crédits**Etablissement(s)**
UFR Chimie**Volume horaire**
24h**Période de
l'année**
Semestre 1

En bref

- **Langue(s) d'enseignement:** Anglais
- **Forme d'enseignement :** Cours magistral, Travaux dirigés & Travaux pratiques
- **Ouvert aux étudiants en échange:** Non

Présentation

DESCRIPTION

Characterizing molecules, materials, and surfaces across various scales is crucial for understanding and optimizing them. Currently, spectroscopic tools are experiencing significant advancements, both in instrumentation and methodology. This course will focus on two main areas: nuclear magnetic resonance (NMR) and optical spectroscopic techniques, including UV-visible, fluorescence, IR, and Raman spectroscopies. The course will cover the use of these techniques from molecule analysis to surface characterization, integrating focuses on the development of optical microscopy techniques and surface-enhanced spectroscopies (SERS, SEIRA, metal-enhanced fluorescence). It aims to introduce students to these spectroscopic methods with three primary objectives: (i) providing a comprehensive understanding of modern NMR and optical spectroscopic techniques used in university research laboratories and centers; (ii) equipping students with theoretical knowledge to analyze NMR, infrared, UV-visible, fluorescence, and Raman spectra; and (iii) offering practical experience in these techniques. Throughout the course, students will delve into the principles, instrumentation, and analytical applications of various NMR and optical spectroscopies.

OBJECTIFS

- **Course and practical sessions (15 h – 10 sessions of 1,5 h)**
 - NMR spectroscopies
 - UV-visible and fluorescence spectroscopies;
 - Infrared and Raman Spectroscopies;
- **Experimental activities (3 TP de 3 h)**

Pour en savoir plus, rendez-vous sur > u-paris.fr/choisir-sa-formation

- NMR spectroscopies
- Electronic spectroscopies (UV-visible and fluorescence)
- Vibrational spectroscopies (Infrared and Raman)

HEURES D'ENSEIGNEMENT

Molecule and surface characterization I	Cours Magistral	10,5h
Molecule and surface characterization I	Travaux Dirigés	4,5h
Molecule and surface characterization I	Travaux Pratiques	9h

PRÉ-REQUIS OBLIGATOIRES

Basic knowledge in spectroscopy

En bref

CONTACTS

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