



# Summer School: Large Scale Facilities



Niveau d'étude  
BAC +5



ECTS  
7 crédits



Composante  
Faculté des  
Sciences



Volume horaire  
72h

## En bref

- > **Date de début des cours:** 1 sept. 2021
- > **Langue(s) d'enseignement:** Anglais
- > **Méthode d'enseignement:** En présence
- > **Organisation de l'enseignement:** Formation initiale
- > **Forme d'enseignement :** Cours magistral
- > **Ouvert aux étudiants en échange:** Non

- Interaction neutrons/synchrotron radiation with matter
- Diffraction methods and instrumentation for neutron and X-ray (synchrotron) scattering
- Spectroscopy: inelastic neutron scattering and X-ray absorption spectroscopy
- Magnetic neutron scattering
- Presentation of neutron and synchrotron beamlines

## Présentation

### Description

The objective is to provide second year students master a good introduction in the use of "Large Scale Facilities" for the study and characterization of materials. In particular, we focus on the use of neutron scattering and 3rd generation synchrotron sources for the study of materials. Indeed, to date, the development and optimization of materials often require sophisticated methods, sometimes accessible only at Large Scale Facilities. This presents a major challenge for basic research and applied. The courses, which take place over two consecutive weeks, give basic instruction on the production of neutrons and synchrotron radiation as well as their specific applications and complementarity. The course content is as follows:

- Neutron and synchrotron sources

### Objectifs

Getting familiar with neutron and synchrotron sources and applications of large scale facilities in materials science

### Pré-requis nécessaires

basics in quantum mechanics, crystallography, physics and chemistry

### Contrôle des connaissances

CC intégral

### Syllabus



neutron and synchrotron sources, interaction neutrons/  
synchrotron radiation with matter, diffraction methods, neutron  
spectroscopy, magnetism, X-ray absorption spectroscopy

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## Informations complémentaires

Contact(s) administratif(s) :

Secrétariat Master Chimie [✉ master-chimie@umontpellier.fr](mailto:master-chimie@umontpellier.fr)

## Infos pratiques

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### Contacts

Responsable pédagogique

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### Lieu(x)

> Montpellier - Triolet