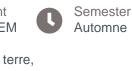


## UE Advanced characterization for Nanostructures





Component
UFR PhITEM
(physique,
ingénierie, terre,
environnement,
mécanique)



> Teaching language(s): English

> Open to exchange students: Yes

Code d'export Apogée: PAX9NPAM

## Presentation

### Description

This course will be dedicated to advanced characterization techniques of nanostructures. It will cover electron microscopy techniques (electron diffraction, loss spectroscopy, imaging), X ray spectroscopy and scattering techniques and Synchrotron radiation measurements.

#### Content

X-ray scattering (from single electron to periodic material, anomalous scattering)

Reciprocal space (reminder +

Surface sensitive X-ray scattering

X-ray absorption fine structure

Examples of application: strain and composition determination, in situ studies of growth

Introduction to the X-ray synchrotron radiation production (including the forth generation source like the ESRF Extremely Brilliant Source)

Coherent X-ray scattering and X-ray photon correlation spectroscopy

The basis of electron microscopy

Electron diffraction and Electron loss Spectroscopy

Imaging and chemical sensitivity (Transmission Electron Microscopy and Scanning Transmission Electron Microscopy)





#### Case studies

## Course parts

UE Advanced characterization for Nanostructures - CMTD

Lectures (CM) & Teaching Unit (UE)

24h

Period: Semester 9

# Useful info

## Campus

> Grenoble - University campus

