

# UE Integrative structural cell biology



ECTS  
6 crédits



Composante  
UFR Chimie-  
Biologie



Période de  
l'année  
Toute l'année

- > **Langue(s) d'enseignement:** Anglais
- > **Ouvert aux étudiants en échange:** Oui
- > **Code d'export Apogée:** YASB9U14

## Présentation

### Description

The course aims at introducing the students to advance and modern methods in structural biology that integrate structural and/or dynamical information at different levels of resolution.

- Structure of large biomolecular assemblies

- Obtaining key information on large biomolecular assemblies and systems
- Electron microscopy and tomography
- NMR spectroscopy
- X-ray and neutron diffraction
- Hybrid approaches (combination of high- and low-resolution structural methods)
- Structure of ribosome, signal recognition particle, viruses,...

- From macromolecules to the cell

- High resolution optical microscopy
- Atomic force microscopy
- Correlative electron microscopy (combination of optical and electron microscopy)
- Structure and dynamics of the cytoskeleton
- Biology of flower .....

- Dynamics of biomolecular systems

- Dynamics by NMR spectroscopy

- Neutron spectroscopy
- Molecular dynamic simulations
- Intrinsically disordered proteins

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## Heures d'enseignement

UE Integrative structural cell biology - TP	TP	12h
UE Integrative structural cell biology - TD	TD	7h
CM	CM	27h

**Période :** Semestre 9

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## Compétences visées

Understanding concepts, prospects and current problems of integrative structural biology, integrating results from different methods (EM, high-resolution optical microscopy, X-ray, NMR, SAXS/SANS, molecular dynamics simulation and functional data), expertise in electron microscopy reconstruction and in hybrid structural methods, insight into large macromolecular assemblies and macromolecular dynamics.

## Infos pratiques

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### Contacts

Responsables pédagogiques

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### Lieu(x) ville

› Grenoble

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### Campus

› Grenoble - Domaine universitaire

