UE Integrative structural cell biology

ECTS
6 crédits

Composante
UFR de Chimie et de biologie

Période de l'année
Toute l'année

Diplômes intégrant cet élément

- Master Biologie - Santé

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

Heures d'enseignement

TP	TP	12h
TD	TD	7h
CM	CM	27h

Période : Semestre 9

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

Contacts

Responsables pédagogiques

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Lieu(x) ville

Grenoble

Campus

Grenoble - Domaine universitaire