

# Advanced Course in Cellular Dynamics

Head: Stéphanie MISEREY, Gaele BONCOMPAIN, Julien DUMONT

**Effectives:** 17

**Language:** English

**Prerequisites:** A prior knowledge of basic cell biology concepts is advised

**Where?**

Institut Curie  
Institut Jacques Monod

**When?**

03/10/2022 to 07/10/2022

**Evaluation:**

Evaluation based on short presentations and overall participation of students

**Questions:**

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**Number ECTS:** 3

**Total numbers of hours:**  
**30h**

**Teaching format:**  
conferences

## Teaching objectives

The goal of this course is to give a general overview of modern cell biology topics of research, to present state of the art methodological and experimental approaches, and to highlight the diversity of model systems used, ranging from whole organisms to *in vitro* reconstituted systems and *in silico* models. Lectures will be given by internationally recognized experts.

## Teaching outline

Day 1	Introduction Tissue morphogenesis Micro-tools for cell biology Clathrin coated pits and Cell migration Actin dynamics in cell migration and invasion Golgi trafficking and RAB GTPases
Day 2	Actin dynamics Mechanisms of chromosome segregation Predicting division plane positioning Plasma membrane dynamics & mechanics Lipid dynamics Regulation of mitotic entry in time & space Lysosomes-related organelles
Day 3	Exosomes
Day 4	Physics of membrane bending Optogenetic tools EVs in developmental signaling
Day 5	Cilia and centrosomes Kinetochore dynamics Phagocytosis Golgi dynamics Polarized transport