

# Introduction to fluorescence imaging for the analysis of living cells

**Prof. Jean-Yves CHATTON**

Dept. Fundamental Neurosciences, Univ. Lausanne

- The course will be given online, along with one in-person Q&A session at the end of the course
  - Recorded video lectures (ca. 2-hour each week) available every week from Tuesdays on
  - In person/hybrid Q&A session with Prof. Chatton on Tuesday 11, 2025 (12:15 -14:00)
- Lectures will be given in English
- Validation of *ONE* credit for students of the local doctoral schools (FBM and LNDS)

**Topics per week:**

- 7 January 2025** : Basics of transmitted light and fluorescence microscopy
- 14 January 2025** : Confocal microscopy
- 21 January 2025** : Modes of image formation, acquisition, signal sampling
- 28 January 2025** : Dynamic recording of cellular functions by fluorescence imaging  
Intracellular ion imaging and cellular signaling.  
Issues related to imaging of living cells
- 4 February 2025** : Other optical applications (proposed topics):  
Fluorescence recovery after photobleaching (FRAP), photoactivation - optogenetics, multiphoton microscopy, fluorescence resonance energy transfer (FRET), optical contrasting methods (phase contrast, DIC), super-resolution microscopy
- 11 February 2025** 12:15-14:00: Q&A session in person / hybrid  
(Petit Auditoire DNF, rue du Bugnon 9, 1005 Lausanne)

**Registration:** register before January 3, 2025 via the link <https://tinyurl.com/FluorescenceImaging>

→ Admission to the course is free and open to anyone interested

**Course materials:**

- available on Moodle: <https://moodle.unil.ch/course/view.php?id=18515>
- log in with your institutional address (UNIL, CHUV, EPFL)
- click on "Faculté de Biologie et de Médecine" > "Ecole doctorale / doctoral school" > "Lemanic Neuroscience Doctoral School"
- course materials will be stored under "Introduction to Fluorescence Imaging for the Analysis of Living Cells"
- the login password will be sent to registered participants the day before course start. Please contact [Ulrike.toepel@unil.ch](mailto:Ulrike.toepel@unil.ch) in case of problems.