

BIO-659

**Advanced Microscopy for Life Science**

Seitz Arne

Cursus	Sem.	Type
Molecular Life Sciences		Obl.
Neuroscience		Obl.

Language of teaching	English
Credits	3
Session	
Exam	Oral presentation
Workload	90h
<b>Hours</b>	<b>45</b>
Courses	15
Exercises	5
TP	25
<b>Number of positions</b>	<b>16</b>

**Frequency**

Every year

**Remark**

Every year in September. To register, contact EDMS Administration

**Summary**

For further information, please get in contact with the instructor or have a look on the following web-site:  
<http://biop.epfl.ch/>

**Content**

- Basic optical principles
- Light microscopy, fluorescence microscopy
- Confocal microscopy
- Fluorescence Resonance Energy Transfer (FRET)
- Photobleaching, photoactivation techniques, Fluorescence Recovery after Photobleaching (FRAP)
- Structured Illumination microscopy
- Localization techniques (PALM, STORM)
- Stimulated emission depletion microscopy (STED)

**Note**

Places are limited (16 students) due to hand-on sessions. The selection (if necessary) will be made based on the scientific needs, expressed in a letter of intent (maximally 2000 characters) by the PhD student. It should contain a brief description of the project emphasizing the need of advanced light-microscopy methods.

For further information please get in contact with the instructor or have a look on the following web-site:  
<http://biop.epfl.ch/>

**Keywords**

Light-microscopy, live-cell imaging, high/super resolution light microscopy.

**Assessment methods**

Presentation

**Resources**

**Websites**

- <http://biop.epfl.ch/>