

Live Cell Imaging Facility Microscopy course 24 Jan- 11 Feb 2022

Schedule subject to last minute changes. Always check the latest update on this page.

In Blue: Lectures and demos that are publicly broadcasted, no registration needed (see Zoom link and instructions on the LCI website)

	When	Who	What	
Week 1	Before		Assignments	
	Mon 24/01 09:00-09:30 09:30-10:30 10:45-11:45 13:00-14:00 14:15-15:15 15:15-16:30		Student imaging challenge symposium Welcome and introduction, Virtual tour of the facility Student imaging challenge symposium Student imaging challenge symposium Student imaging challenge symposium Student imaging challenge symposium Discussion: most common problems encountered and tips	
	Tues 25/01 09:30-09:50 09:50-10:10 10:20-10:45 10:45-11:15 11:15-12:00 13:00-14:15 14:15-15:15 15:30-17:00	Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader	Optics, Image formation, Fluorescence, Anatomy of a microscope Lecture: Nature of light Lecture: Basic optics Lecture: Image formation Lecture: Fluorescence and fluorophores Workshop: Bleedthrough assessment, Part 1 Workshop: Bleedthrough assessment, Part 2 Lecture: Anatomy of a microscope Lecture: Anatomy of a microscope	
	Wed 26/01 09:00-10:00 10:10-10:30 10:30-10:45 10:45-12:10 13:00-17:00	Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader	Objectives, Point Spread Function and resolution, Refraction index mismatch Lecture: Objectives Lecture: Point Spread Function and resolution Lecture: Refraction index mismatch Workshop: The art of bleaching the sample Workshop: Anatomy of a microscope	
	Thurs 27/01 09:00-09:45 10:00-11:00 11:00-12:00 13:00-14:30 14:45-15:45 15:45-16:45 16:45-17:00	Sylvie Le Guyader Sylvie Le Guyader Gabriela Imreh Sylvie Le Guyader Gabriela Imreh Sylvie Le Guyader	Sensors, Signal, background and noise, Spectral imaging, Saturation and bit depth Lecture: Sensors, introduction to pixel size Lecture: Signal, background and noise Lecture: Filter-based vs spectral imaging. Linear unmixing Lecture: Saturation, underexposure, bit depth and image display Workshop: Filter-based vs spectral imaging and linear unmixing Discussion and quiz Week 1 Wrapping up Week 1 and assignments	
	Fri 28/01		Assignments and Workshop: Student imaging challenge	
	Mon 31/01		Assignments and Workshop: Student imaging challenge	
	Week 2	Tues 01/02 09:00-10:00 10:10-12:10 13:00-14:00 14:00-15:00 15:15-16:00 16:00-17:00	Anna Burvall Gabriela Imreh David Unnersjö-Jess Sylvie Le Guyader Sylvie Le Guyader	Resolution, contrast and Nyquist sampling, Immunostaining, Clearing, Scaling up, Sample preparation Project reports in groups with peer assessment Lecture: Resolution, contrast, Nyquist sampling and MTF curves Lecture: Immunostaining troubleshooting Lecture: Clearing and expansion microscopy Lecture: Scaling up and speeding up imaging: xyz automation, autofocus, fast imaging Discussion and quiz
		Wed 02/02 09:00-10:30 10:45-11:15 11:15-12:00 13:00-14:30 14:45-15:45 15:45-17:00	Sylvie Le Guyader Sylvie Le Guyader Victoria Menendez Benito Jeremy Adler Oliver Garner/Marie Andersson Jianjiang Hu	Bridging concepts, Imaging parameters, High throughput, Colocalization Lecture: Bridging concepts: resolution, contrast, objectives, sampling rate Lecture: Setting parameters on confocal and widefield systems Lecture: High throughput/content imaging Lecture: Colocalization Workshop: Camera Workshop: Objectives and Refraction Index
		Thurs 03/02 09:00-10:00 10:10-11:10 11:10-12:10 13:00-14:00 14:00-15:00 15:15-16:45 16:45-17:00	Sylvie Le Guyader Gabriela Imreh Hans Blom Gabriela Imreh Sylvie Le Guyader Sylvie Le Guyader	Volume imaging, Live cell imaging, Super resolution Lecture: Volume imaging, Deconvolution, Multiphoton, Adaptive Optics Lecture: Sample preparation tips Lecture: Introduction to super resolution microscopy Workshop: Widefield vs confocal Workshop: High speed imaging Discussion and quiz Week 2 Wrapping up Week 2 and assignments
Fri 04/02			Assignments and Workshop: Student imaging challenge	
Mon 07/02			Assignments and Workshop: Student imaging challenge	
Tues 08/02 09:00-10:00 10:10-10:40 10:40-11:10 11:10-12:10 13:00-14:00 14:00-15:00 15:15-16:00 16:00-17:00		Sylvie Le Guyader Simone Lepper Sylvie Le Guyader Philipp Struntz, Nikon Europe Gabriela Imreh Sylvie Le Guyader Sylvie Le Guyader	Fourier, Ai, Publishing images and image formats, STORM Project reports in groups with peer assessment Lecture: Introduction to Fourier space and Fourier transforms Lecture: Artificial Intelligence in microscopy Lecture: How to deal with images for publications, image formats Workshop: Super resolution STORM (public workshop) Lecture: Live cell imaging, label free imaging Workshop: Multiphoton microscopy Discussion and quiz	
Week 3	Wed 09/02 09:00-10:00 10:10-11:10 11:10-12:10 13:00-15:00 15:00-15:15 16:45-17:00	Petr Walczysko Petr Walczysko Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader	OMERO.figure, Bioimage analysis Demo: How to easily make figures for publication with OMERO.Figure Demo: How to easily make figures for publication with OMERO.Figure Workshop: Light sheet Discussion and quiz Week 3 Discussion and quiz Week 3 Wrapping up Week 3 and assignments	
	Thurs 10/02 09:00-10:00 10:10-12:10 13:00-15:00 15:00-15:30	Gisele Miranda G. Miranda/C. Avenel/A. Klemm G. Miranda/C. Avenel/A. Klemm Sylvie Le Guyader	Image processing and analysis Lecture: Introduction to Bioimage analysis Workshop: Image analysis Workshop: Image analysis Questions, conclusion and feedback for lectures and workshops	
	Fri 11/02 10:00-12:00		Examination Examination	
	After		Assignments	