

The Live Cell Imaging Facility Microscopy course 22 Jan- 13 Feb 2026			
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 (use Zoom link on the LCI website)			
	When	Who	What
	Before the course		Preparation of own sample and presentation, survey, collecting information, etc
Week 1	Thu 22/01 09:00-09:20 09:20-10:35 11:00-12:15 13:15-14:30 15:00-16:15 16:15-16:35 16:35-17:00 17:00-17:10		Module 1: Student imaging challenges Introduction Student Imaging Challenge Presentations Student Imaging Challenge Presentations Student Imaging Challenge Presentations Student Imaging Challenge Presentations Group discussion: New ideas Group discussion: Which metrics does your scientific question require? Questions
	Fri 23/01 09:00-09:10 09:10-09:15 09:15-09:45 09:45-10:15 10:45-11:00 11:00-11:15 11:15-11:25 11:25-11:50 11:50-12:00 13:00-15:00 15:15-17:10 17:10-17:15	 Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader	Module 2: Working with light and fluorophores Feedback, questions, Learning Objectives and portfolios Lecture: Key concepts of light microscopy 1 Lecture: Nature of light Lecture: Basic optics for light microscopy Lecture: Image formation Lecture: Key concepts of light microscopy 2 Group quiz: Image formation Lecture: Fluorescence and fluorophores Workshop: Imaging efficiency and bleedthrough Workshop: Imaging efficiency and bleedthrough Workshop: Imaging efficiency and bleedthrough peer review and quizzes Questions
	Mon 26/01 09:00-09:10 09:10-10:10 10:10-10:20 10:30-11:10 11:10-11:30 11:30-12:00 13:00-13:40 13:40-14:40 14:55-17:10 17:10-17:15	 Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader	Module 3: Anatomy of a microscope Feedback, questions, Learning Objectives and portfolios Lecture: Anatomy of a microscope: architecture, transmitted light versus fluorescence Group quizzes Lecture: Anatomy of a microscope: wide field and single-point confocals Group quizzes Lecture: Anatomy of a microscope: multipoint confocals and light sheet systems Quizzes and group discussion Workshop: Anatomy of your microscope: video and survey demo Workshop: Anatomy of your microscope Questions
	Tue 27/01 09:00-09:10 09:10-10:10 10:20-10:40 10:40-11:00 11:00-12:00 13:00-13:25 13:25-14:25 14:25-15:00 15:15-15:50 15:50-16:20 16:20-16:50 16:50-17:00	 Sylvie Le Guyader Sylvie Le Guyader Sylvie Le Guyader Jianjiang Hu Sylvie Le Guyader	Module 4: Working with objectives Feedback, questions, Learning Objectives and portfolios Lecture: Objectives Lecture: Point Spread Function and resolution Quiz: Objectives, PSF and resolution Group discussion: The optical resolution of the objectives on YOUR microscope Lecture: Refraction index mismatch and optical aberrations Workshop: Refraction Index mismatch Group quizzes Lecture: Efficient strategies to find the area of interest: large FOV, tiling and autofocus Group discussion: Focus strategy Group quizzes Questions
	Fri 30/01		Assignments, Student Imaging Challenge Workshop
	Mon 02/02		Assignments, Student Imaging Challenge Workshop
	Tues 03/02 09:00-09:20 09:20-09:40 09:40-10:05 10:15-11:30 11:30-12:00 13:00-14:10 14:10-14:40 14:40-15:25	 Sylvie Le Guyader Gabriela Imreh Gabriela Imreh David Unnersjö-Jess	Module 5: Sample preparation Feedback, questions, Learning Objectives and portfolios Group discussion: Preparing and imaging live samples Teacher Imaging Challenge: What did I see in your samples this week? Lecture: Sample preparation tips Group discussion: How can you improve your sample preparation? Lecture: Immunostaining troubleshooting Group discussion: How can you improve your immunostaining? Lecture: Clearing and expansion microscopy

Week 2	15:40-16:40	Sylvie Le Guyader	Workshop: The art of bleaching the sample
	16:40-17:10		Group discussion and quizzes: The perfect sample for light microscopy
	17:10-17:15		Questions
	Wed 04/02		Module 6: The digital image
	09:00-09:10		Feedback, questions, Learning Objectives and portfolios
	09:10-10:00	Sylvie Le Guyader	Lecture: Bridging concepts: optical and digital resolutions, contrast and sampling
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	10:50-11:50		Group discussion: Does the pixel size in your images fulfil the Nyquist sampling theorem?
	11:50-12:00		Group quiz
	13:00-13:20	Sylvie Le Guyader	Lecture: Sensors
	13:20-14:10	Sylvie Le Guyader	Lecture: Signal, background and noise
	14:10-14:40		Workshop: Speed versus noise
	14:40-15:10		Group discussion: How could you improve the SNR in your images?
	15:25-16:40		Group discussion: How could you improve the SBR in your images?
	16:40-17:10		Group quizzes
	17:10-17:15		Questions
Week 3	Thurs 05/02		Module 7: Capturing light
	09:00-09:10		Feedback, questions, Learning Objectives and portfolios
	09:10-10:00	Sylvie Le Guyader	Lecture: Saturation, under exposure, bit depth and image display
	10:10-11:00	Sylvie Le Guyader	Lecture: Saturation, under exposure, bit depth and image display
	11:00-12:00		Group discussion and quizzes: What do you need to segment in your images?
	13:00-13:30	Gabriela Imreh	Lecture: Imaging multiple colours at once
	13:30-14:00		Group discussion: How does your system image multiple colours?
	14:00-14:45	Marie Andersson	Workshop: Camera
	15:00-15:45	Sylvie Le Guyader	Lecture: Typical workflow to set imaging parameters
	15:45-16:15		Group discussion: How do you set the parameters on your microscope?
	16:15-17:10		Group quizzes
	17:10-17:15		Questions
	Fri 06/02		Assignments, Student Imaging Challenge Workshop
	Mon 09/02		Assignments, Student Imaging Challenge Workshop
	Tues 10/02		Module 8: Off the beaten track
	09:00-09:20		Feedback, questions, Learning Objectives and portfolios
	09:20-10:00		Teacher Imaging Challenge: What did I see in your samples this week?
	10:00-10:30	Andrii Rogov	Lecture: Artificial Intelligence in light microscopy
	10:40-11:40	Hans Blom	Lecture: Introduction to super resolution microscopy
	11:40-12:00		Quizzes
	13:00-13:15	Erik Wernersson	Lecture: Introduction to 2D and 3D deconvolution
	13:15-14:00	Erik Wernersson	Workshop: Test 2D deconvolution
	14:00-15:00		Quizzes
	15:15-15:35	Sylvie Le Guyader	Lecture: Introduction to Fourier space and Fourier transforms
	15:35-15:45		Group discussion: Ai and super resolution in your project
	15:45-16:30	Fabrice Cordelières	Lecture: Colocalization
	16:30-17:10		Quizzes
	17:10-17:15		Questions
	Wed 11/02		Module 9: Publishing images
	09:00-09:10		Feedback, questions, Learning Objectives and portfolios
	09:10-09:50		Group discussion: Microscope company role play
	10:00-12:00	Petr Walczysko	Workshop: How to easily make figures for publication with OMERO.figure
	13:00-14:00	Sylvie Le Guyader	Lecture: Publishing and managing images
	14:00-15:00		Group discussion: Write your Material and Methods
	15:15-15:35	Douglas W. Crome	Lecture: Ethics in imaging
	15:35-16:15	Douglas W. Crome	Workshop: Ethics in imaging
	16:15-16:20		Questions
	Thurs 12/02		Module 10: Image analysis and Course conclusions
	09:00-09:10		Feedback, questions, Learning Objectives and portfolios
	09:10-10:10	Agustin Corbat	Lecture: Introduction to Bioimage analysis
	10:20-12:20	Agustin Corbat	Workshop: Image analysis
	13:20-15:20	Agustin Corbat	Workshop: Image analysis
	15:20-16:45	Sylvie Le Guyader	Course conclusions: Reminder of the key concepts of light microscopy
	Evening		Alumni pub
	Fri 13/02		Portfolio consolidation and final submission