

Day 1: Monday 16 March - Fundamental Principles of Microscopy

Ian / Richard 9:30 Welcome to the course

- 1 Richard 9.45-10.45 General introduction to light microscopy
- 2 Ian 10.45-12.00 Principles of microscopy and microscope anatomy
- 3 Ian 1.00-2.00 Contrast enhancement (phase contrast and DIC)
- 4 Ester 2.00-3.00 Basic Fluorescence Microscopy and sample prep
- 5 Richard 3.30-4.30 Basic image analysis
- 6 Mark 4.30-5.30 Fluorescent dyes and proteins

Day 2: Tuesday 17 March - Imaging Cells and Tissues

- 7 Richard 9.00-10.00 Live cell imaging
- 8 Alan 10.00-11.00 Confocal, spinning discs and Multiphotons
- 9 Ian 11.30-12.30 Advanced widefield microscopy and bespoke systems
- 10 Antonia 1.30-2.30 Cameras for microscopy
- 11 Antonia 2.30-3.30 F* techniques: FRET, FLIM, FRAP, FLIP
- 12 Christian 4.00-5.00 STED, FCS
- 13 Eva 5.00-5.20 Light-sheet microscopy

Day 3: Wednesday 18 March - Advanced imaging / Applied Image handling

- 14 Chris L. 9.00-10.00 Single Molecule Techniques
- 15 Rainer 10.00-11.00 Storm/PALM techniques.
- 16 Lothar 11.30-12.30 OMX
- 17 David 1.30-2.30 Advanced Image analysis
- 18 Douglas 2.30-3.00 Image Management
- 19 Errin 3.00-4.00 Electron Microscopy

Day 4: Thursday 19 March – Microscope demos and image analysis

15 min demos:

8 sessions in the morning,

8 sessions in the afternoon

(4 people per group, ~60 people in total)

Ana	9:00 – 17:00	DV live: Jupiter–YFP macrophages
Richard	9:00 – 17:00	Spinning disk live: Jupiter–YFP macrophages
Rainer	9:00 – 17:00	OMX v2 dSTORM: Fixed samples
Lothar	9:00 – 17:00	OMX v3 SIM: Fixed
Ian	9:00 – 17:00	Zeiss scanning confocal: Fixed samples
Olympus	9:00 – 17:00	Olympus TIRF (prep area): macrophages / other
Antonio	9:00 – 17:00	Lightsheet: <i>Drosophila</i> brain /other
David	9:00 – 17:00	Image analysis: ImageJ

Microscopy Course 2014 - lectures and handout material may be downloaded from:

http://www.micron.ox.ac.uk/microngroup/2014_Lectures.php

Microscopy Course 2015 - lectures and handout material may be downloaded (when available) from:

http://www.micron.ox.ac.uk/microngroup/2015_Lectures.php