

## Schedule *Light and confocal microscopy*, 3HEC, starting February 29<sup>th</sup> 2012

This course is given as a postgraduate course within the SLU Graduate School in Organism Biology and has been developed together with Stefan Gunnarsson, Uppsala University. The maximum number of students is 20 (giving 10 groups for the microscopy exercise).

The course is divided into three blocks, starting with a block of lectures describing light microscopy and confocal microscopy. The second block is a practical block, where each student should get hands-on experience on light microscopes (including dark field, phase contrast, interference phase contrast and fluorescence). The third and final block includes presentations of the experiences from block two, and one lecture/demonstration about confocal microscopy as well as a researcher presenting how she uses light and confocal microscopy in her research.

### Contact information:

Cajsa Lithell, Dept. of Forest Mycology and Plant Pathology, [Cajsa.Lithell@slu.se](mailto:Cajsa.Lithell@slu.se)

Stefan Gunnarsson, UU, [Stefan.Gunnarsson@ebc.uu.se](mailto:Stefan.Gunnarsson@ebc.uu.se)

The web-page of SLU Graduate School in Organism Biology:

<http://www.slu.se/sv/forskarskolor/organismbiologi/>

Send your application (dead-line February 15, 2012) to Cajsa Lithell, [Cajsa.Lithell@slu.se](mailto:Cajsa.Lithell@slu.se), 018-672797

---

### **BLOCK 1, LECTURES February 29 – March 2**

Day	Time			Room
29 February				
Wednesday	8.30-9.00	Welcome	Cajsa Lithell	A-402, BioC
	9.00-12.00	Lecture 1	Stefan Gunnarsson	A-402, BioC
1 March				
Thursday	9.00-12.00	Lecture 2	Stefan Gunnarsson	A-372, BioC
2 March				
Friday	9.00-12.00	Lecture 3	Stefan Gunnarsson	A-372, BioC

---

### Some keywords:

Lecture 1: light, electromagnetic radiation, waves, photons, lenses, resolution, contrast, images

Lecture 2: microscope, objectives, lenses, chromatic aberrations, astigmatism, coma, Köhler illumination, refractive index, phase contrast, DIC, dark field

Lecture 3: confocal microscopy, laser, specimen, staining, imaging

### More information:

<http://micro.magnet.fsu.edu/primer/>

**Cajsa Lithell, Dept. of Forest Mycology and Pathology, will supervise during block 2. The practical will be held at the BioCentre, Department of Forest Mycology and Plant Pathology.**

Each of you should book ONE morning or afternoon together with Cajsa and the light microscopes (choose a date from the schedule below). You should work in pairs. Please, book a date as soon as possible, so that the microscopes can be reserved.

One morning or afternoon is of course not enough to learn to handle a microscope. Practice at your home department, or book extra time at the microscopes available at the Dept. of Forest Mycology and Plant Pathology or the Dept. of Plant Biology and Forest Genetics. If you need, you can book extra time with Cajsa.

There are course samples that you will use, but you can also bring your own ones.

---

### **BLOCK 2, LIGHT MICROSCOPY PRACTICAL**

Dates and times available for booking during the period March 5 – March 9:

Date	Time
5 March	9-12 or 13-16
6 March	9-12 or 13-16
7 March	9-12 or 13-16
8 March	9-12 or 13-16
9 March	9-12 or 13-16

Room: D-317 (Department of Forest Mycology and Plant Pathology)

---

### **BLOCK 3, GROUP PRESENTATIONS, EXAMINATION 20<sup>th</sup> & 22<sup>nd</sup> March**

Day	Time		Room
20 (?) March			EBC, Norbyv. 18A
Tuesday	9.00-12.00	Half class. Confocal microscope, demonstrations.	
	13.00-16.00	Half class. Confocal microscope, demonstrations.	
22 March			
Thursday	9.00-10.00	Practical applications, Bettina Ryll (Department of Organism Biology, EBC)	A-372, BioC
	10.00-14.00	Presentations, Stefan Gunnarsson and Cajsa Lithell. Present your results from the microscopy exercise. Pitfalls and observations. Describe your research/ field of research ca. 10-15 minutes.	A-372, BioC

---