

Confocal microscopy, 7 credits

Confocal microscopy and more

Course Organizer

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Language: English

Subject: Biology

Marking scale: Pass / Failed

Syllabus approved: XX.08.2014

Prerequisites

The practical part of the course is intended for PhD students within the SLU Graduate School in Organism Biology, but will be open for all interested PhD students/researchers. The lectures will be open for anyone who would like to attend, no registration is required for the theoretical part.

Objective

After the course students will be able:

1. to choose optimal microscopy method for a given task
2. to plan an experiment with controls which will not rely on “seeing is believing” concept
3. to perform confocal microscopy
4. use ZEN and ImageJ softwares for image analysis
5. produce publication-quality images

Content

The course includes a strong theoretical background in confocal microscopy in a form of lectures and seminars. Students will have an opportunity to learn from experts who are running microscopy facilities at SciLifeLab and from researchers who are developing cutting edge microscopy technologies. All students will have a hands-on experience with confocal, bi-photon, super-resolution and Light sheet microscopes. The course will be a great opportunity for all students to visit facilities available in Uppsala and also learn about other technologies available in Sweden and abroad. Students will also be introduced to a set of available softwares for image analysis including Carl Zeiss ZEN and open source ImageJ.

Literature

www.google.com

Examination

The student should attend at least 80% of all lectures and seminars and complete the practical part of the course. During the practical part students will work in small groups. An experiment for each group will be planned in advance to introduce students to advantages and disadvantages of different confocal microscopes. Each student will have to write a brief report in a form of materials and methods+figure for a publication. In addition each group will make a presentation at the final seminar and discuss them with other groups.

Additional information

Maximum 20 students per course occasion.

Responsible department

Department of Plant Biology