

BIMA3210

Digital Image Processing II, 2018

Teachers: Pasi Kankaanpää (ÅAU), Joanna Pylvänäinen (ÅAU), Elnaz Fazeli (UTU)

Place: BioCity 3rd floor computer class room, (or possible online participation)

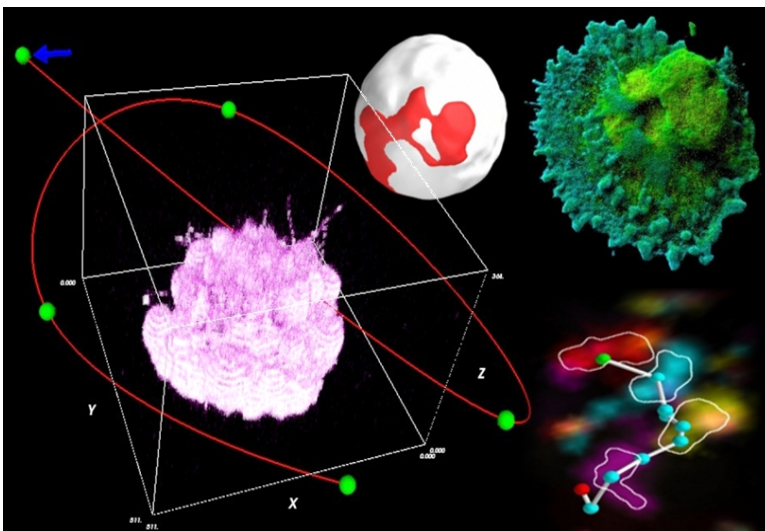
Registration: By 31st of January 2018 by email to bima-office@abo.fi. Indicate participation mode in the registration (online/physical). Limited participation.

To who: For any bioscientist dealing with digital images, and especially those wanting to get more out of their images, both in terms of visual impact and numerical results. A must for the BioImaging Master's Program students and anyone hoping to work professionally with microscopy or bioimage analysis.

Objectives: On this course you will learn how to visualize, animate, process and quantitatively analyze multi-dimensional digital bioimages. The focus is more on how to do things in practice, from the point of view of an image analyst or life scientist. The course is a direct continuation to BIMA3209 Bioimage Informatics 1, and includes going through and expanding on the BIMA3209 exercises.

Content: 3D rendering and animation, colocalization analysis, segmentation-based analyses, quality checks and trouble shooting of analysis results, batch processing large amounts of data, and ethics and guidelines for working with digital images. Other topics, such as color spaces and motion tracking, may be included based on the participants' interests and available time. The source material will consist mostly of multi-dimensional fluorescence-based microscopy images, but the principles learned can be applied to any type of image, and also other types of sample material can be worked on.

Modes of study: The course consists of interactive practical sessions in a computer room. Each session starts with a lecture-type presentation, followed by practical work on the presented topic. Evaluation is based on practical exercises; there is no exam. **Online participation:** Pioneered last year and may be possible also in 2018 course. In addition to traditional lecture and demo course, a fully virtual, independent online course will be run on Moodle in parallel. It consists of video tutorials, hands-on exercises and discussion forum. This course well-suited for those who have challenges in fitting the lectures in their timetables.



Tentative course schedule 2018:

Mon 5.2	9.15-12
Thu 8.2	13.15-16
Mon 12.2	9.15-12
Thu 15.2	13.15-16
Mon 19.2	9.15-12
Thu 22.2	13.15-16
Mon 26.2	9.15-12

Reserve sessions (used as needed; if free, can be used for assignments and self-studies):

Thu 1.3	13.15-16
Mon 12.3	9.15-12

