



# **BMB207: Biophotonics PhD course 2025**



Advanced microscopy and biophotonics course at DaMBIC, University of Southern Denmark.  
Monday June 2<sup>nd</sup> - Friday June 6<sup>th</sup> 2025.

Bioimaging plays an important role in modern biosciences not only as a tool for research but also to improve medical treatments. The main objective of this course is to provide the theoretical basis of bioimaging together with “hands on” laboratory practice. The goal of the course is to teach the participants general principles of fluorescence and light microscopy as well as to demonstrate the principles behind advanced fluorescence and imaging techniques and to give an introduction to image processing and analysis.

There will be practical demonstrations and hands on exercises on all topics. The course is a five-day intensive course taking place within one week. The course is relevant for PhD students within medicine, physics, chemistry, biochemistry, molecular biology, nano-bioscience, pharmaceutical sciences, agricultural science or biology. The course corresponds to 5 ECTS points.

## *Learning objectives:*

A student who has met the objectives of the course will be familiar with:

- Widefield microscopy
- Laser scanning confocal microscopy
- Two-photon microscopy
- Spinning disk confocal microscopy
- Fluorescence Correlation- and Raster Image Correlation Spectroscopy (FCS and RICS)
- Super resolution microscopies; STED, SIM, localization microscopies STORM and Minflux
- Automated image acquisition and analysis
- Coherent anti Raman scattering microscopy (CARS)
- Image deconvolution and analysis

Course responsible: Jonathan R. Brewer [brewer@memphys.sdu.dk](mailto:brewer@memphys.sdu.dk)

General course information and registration: [www.dambic.dk](http://www.dambic.dk) (/training and courses) OR

<https://www.sdu.dk/en/dambic/training-and-courses/courses/biophotonics-course>