

I Image Analysis Course

PhD Program in Neuroscience 2022-2023

9th-11th May 2023



Coordinating University: Miguel Hernández University.

Coordinators:

Javier Morante (Institute of Neurosciences).

Giovanna Expósito (Institute of Neurosciences).

Contact:

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Invited teaching staff:

Manel Bosch (University of Barcelona).

José Manuel Morante (University of Valencia).

Delisa Garcia (ZEISS company).

Modality: In person.

Number of hours: 21 hours.

Location: Aula 4.0.09, Severo Ochoa building (Campus de San Juan).

Objectives

The training activity will cover the most common image analysis concepts and operations from different microscopy techniques (brightfield, widefield, confocal, multiphoton, light sheet and super-resolution) to obtain the most appropriate and reliable quantifiable scientific data from the biological events to be studied.

Contents

- Fundamentals of digital imaging.
- Image processing: operations to correct errors and enhance the image.
- Segmentation of regions of interest.
- Quantifiable parameters of the image.
- Colocalization studies.
- Pipeline design for complex image analysis procedures.
- Analysis of 3D/4D images.
- Machine learning.