

Python for Analysis and Processing of Images

Introductory Session: October 13–14

Day 1 (Oct 13)

<i>Time</i>	<i>Topic</i>
8:45-9:00	Registration + morning coffee & tea
9:00-10:00	Welcome + Intro to Python & Jupyter Notebook
10:00-11:30	Python basics - syntax 1
11:30-12:20	Lunch break
12:20-14:00	Python basics - syntax 2
14:00-14:20	Coffee break
14:20-16:00	Working with packages: numpy, matplotlib, pandas, image i/o
16:00-16:20	Coffee break
16:20-18:00	Recap exercises

Day 2 (Oct 14)

<i>Time</i>	<i>Topic</i>
9:00-10:30	Image processing – transformations, filters, thresholding. morphology
10:30-10:45	Coffee break
10:45-12:00	Image analysis – measurements, plotting, statistics
12:00-12:45	Lunch break
12:45-14:15	Automating image analysis – batch processing
14:15-14:30	Coffee break
14:30-16:00	Napari session - GUI
16:00-16:15	Coffee break
16:15-18:00	Recap exercises

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Advanced Session: October 20–21

Day 1 (Oct 20)

<i>Time</i>	<i>Topic</i>
8:45-9:00	Registration + morning coffee & tea
9:00-11:30	Welcome + Warm-up: From pixels to numbers (Python basics + Images in Python recap)
11:30-12:20	Lunch break
12:20-14:00	Napari session - automation from Jupyter Notebook
14:00-14:20	Coffee break
14:20-16:00	AI - Image classification with machine learning
16:00-16:20	Coffee break
16:20-18:00	Recap exercises

Day 2 (Oct 21)

<i>Time</i>	<i>Topic</i>
9:00-10:30	AI - Segmentation & denoising with deep learning models
10:30-10:45	Coffee break
10:45-12:15	Complex workflow - colocalization
12:15-13:00	Lunch break
13:00-14:40	Complex workflow – tracking / tracing
14:40-15:00	Coffee break
15:00-16:00	Working with large images – ome-zarr, dask
16:00-16:15	Coffee break
16:15-18:00	Recap exercises