Processing and Analysis of Microscopic Images in Biomedicine (PAMIB), April 8-12, 2024

	Monday 8	Tuesday 9	Wednesday 10	Thursday 11	Friday 12	
8:30 - 9:00	*Registration*	X	X	X	X	
9:00 - 9:45	Digital image formation and terminology	Image acquisition conditions and deconvolution	Tracking - principles and algorithms	3D/4D image visualization and analysis in **Imaris**	Estimation of volume and surface (Point Grid, Cavalieri´s principle, Fakir) - virtual and/or physical sections --- Estimation of length and particle numbers (Slicer, Disector) - virtual sections **9.00-12.30 (2 parallel groups)**	Theoretical Lectures
	Michaela Blažíková	*Ivan Novotný*	*Michaela Blažíková*	*Daniel Reisen*		
9:50 - 10:35	Introduction into Fiji 1	**Huygens**: Image deconvolution I	Fiji: Tracking - practicals	**Imaris**: Examples of interactive image analysis and visualization (using cloud computers)		Practicals in One Group
	Jan Valečka	*Ivan Novotný*	*Michaela Blažíková*	*Daniel Reisen*	*Barbora Radochová*	
10:35 -10:55	**coffee**	**coffee**	**coffee**	**coffee**	**coffee**	
10:55 - 11:40	Introduction into Fiji 2	**Huygens**: Image deconvolution II	Evaluation of colocalisation in microscopic images	FRAP data analysis	3D analysis: Scale setting, 3D image filtration and measurement in Fiji --- Triangulated surfaces reconstruction **9.00-12.30 (2 parallel groups)**	Practicals in Two Parallel Separated Groups
	Jan Valečka	*Ivan Novotný*	*Martin Čapek*	*Michaela Blažíková*		
11:45 - 12:30	Image analysis in Fiji	**Huygens**: Image deconvolution III (stand-alone practical tasks)	Fiji: Evaluation of colocalisation in microscopic data	Fiji: FRAP data analysis		
	Michaela Blažíková	*Ivan Novotný*	*Martin Čapek*	*Michaela Blažíková*	*Jiří Janáček*	
12:30 - 13:30	**Lunch**	**Lunch**	**Lunch**	**Lunch**	**Informal lunch with pizza 12.30-13.00**	
13:30 - 14:15	Fiji: Stand-alone practical tasks	Segmentation methods	Pattern: Evaluation of clustering and colocalisation of point patterns	3D image processing and geometrical modelling	**Final course evaluation + Certificate handover 13.00-14.00**	
	Michaela Blažíková	*Martin Čapek*	*Vlada Philimonenko*	*Jiří Janáček*		
14:20 - 15:05	Introduction into napari (Python environment for image processing)	Fiji: Using segmentation for detection of structures in various microscopic images	Fiji: Macros - Introduction into IJM language	Fiji: Image filtration / Morphological image processing and analysis		
	Jan Valečka	*Martin Čapek*	*Jan Valečka*	*Jiří Janáček*		
15:10 - 15:55	napari: Practical examples	Fiji: Artificial Intelligence (AI) approaches to image segmentation	Fiji: Using macros for data processing and analysis	Stereological methods and measurement		
	Michaela Blažíková	*Martin Čapek*	*Jan Valečka*	*Barbora Radochová*		
16:00 - 16:20	Short participant test	Short participant test	Short participant test	Short participant test		