

Master in Life Sciences

A cooperation between
BFH, FHNW, HES-SO, ZHAW

Module title	Imaging for the Life Sciences
Code	CO4
Degree Programme	Master of Science in Life Sciences
Group	Computation
Workload	3 ECTS (90 student working hours: 42 lessons contact = 32 h; 58 h self-study)
Module Coordinator	Name: Dr. Andreas Hock Phone: +41 (0)58 934 50 99 Email: andreas.hock@zhaw.ch Address: ZHAW Life Sciences und Facility Management, Grüental, 8820 Wädenswil
Lecturers	Dr. Andreas Hock, ZHAW, Dr. Norman Juchler, ZHAW, Prof. Dr. Steffi Lehmann, ZHAW, Dr. Luis Dean Ben, ETH Zurich
Entry requirements	Bachelor level of analysis, linear algebra, statistics, python programming skills There is an online tutorial available for students without python skills.
Learning outcomes and competences	After completing the module, students will be able to: <ul style="list-style-type: none"> • Understand the techniques of different imaging modalities used in medicine and the life sciences, e.g. ultra-sound, X-rays, CT, MRI, SPECT, PET etc. • To interpret typical image data from the life sciences and (bio-)medicine • Perform standard image processing techniques, e.g. de-noising, segmentation, registration etc. using Python / Matlab or similar
Module contents	<ul style="list-style-type: none"> • Imaging methods • Image processing techniques & workflows • Application to different fields in the life sciences • Student projects • Excursions
Teaching / learning methods	Lectures, accompanied with practical work
Assessment of learning outcome	1. Project work (50%) 2. Written exam (closed-book) (50%)
Format	7-weeks
Timing of the module	Spring semester, CW 15-22
Venue	Blended learning format. Presence sequences take place in Olten
Bibliography	
Language	English
Links to other modules	
Comments	
Last Update	18.09.2024