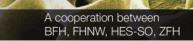
Master in Life Sciences



Module title	Optimisation Methods
Code	BECS4
Degree Programme	Master of Science in Life Sciences
Group	BECS (Biomedical Engineering and Computational Science)
Workload	3 ECTS (90 student working hours: 42 lessons contact = 32 h; 58 h self-study)
Module	Name: Erik Schkommodau
Coordinator	Phone: +41 (0)61 228 54 19
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	Address: FHNW, HLS, Gründenstrasse 40, 4132 Muttenz
Lecturers	Prof. Dr. Erik Schkommodau, FHNW
Entry requirements	Bachelor level of analysis, linear algebra, statistics; Matlab programming skills
	There is an online tutorial available for students without Matlab skills
Learning outcomes	After completing the module, students will be able to:
and competences	explain and validate different optimization methods
	apply them appropriately to problems in their field (e.g. medical measurement
	data).
Module contents	The major topics covered in the module are:
	identification of problems solvable with optimization methods
	abstraction and modelling of task description
	coding of optimization tasks
	 getting an overview about linear, non-linear, deterministic and stochastic
	optimization methods including necessary mathematical methods
	 implementation of examples from various fields with Matlab
Teaching / learning	lecture, exercises, seminar-style, project work, self-study, Matlab programming
methods	
Assessment of	1. individual project work including a short presentation (100%)
learning outcome	
Format	7-weeks
Timing of the	Spring semester, CW 8-14
module	
Venue	Mix of online and on-site lectures (in Olten)
Bibliography	Additional course material:
	Practical Methods of Optimization Paperback, by R. Fletcher, 2009 Applied Dynamic Programming (Princeton Legacy Library), by Richard E. Bellman (Author), Stuart E
	Dreyfus, 2015
	Numerical Recipes: The Art of Scientific Computing, by William H. Press, Saul A. Teukolsky, William T.
	Vetterling, Brian P. Flannery, 3rd Edition
Language	English
Links to other	
modules	
Comments	
Last Update	28.07.2021