

Module title		Abbreviation
Machine Learning and Numerics Lab		10-M-MLNL-222-m01
Module coordinator		Module offered by
Dean of Studies Mathematik (Mathematics)		Institute of Mathematics
ECTS	Method of grading	Only after succ. compl. of module(s)
6	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	undergraduate	--
Contents		
Numerical solution of linear and nonlinear Systems of equations, gradient methods, Newton methods, step size selection, numerical optimization, optimization for machine learning (e.g. ADAM)		
Intended learning outcomes		
The student is acquainted with mathematical software, e.g. MATLAB, Python or Julia, able to apply suitable numerical methods to machine learning problems and to adequately work out and present developed solutions.		
Courses (type, number of weekly contact hours, language – if other than German)		
V (2) + P (2)		
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)		
project work (30 to 60 hours) Language of assessment: German and/or English creditable for bonus		
Allocation of places		
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Additional information		
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Workload		
180 h		
Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Bachelor' degree (1 major) Mathematical Data Science (2022) exchange program Mathematics (2023)		