Module title			Abbreviation
Machine Learning and Numerics Lab			10-M-MNL-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's degree (1 major) Economathematics (2022)
Bachelor's degree (1 major) Economathematics (2023)
Bachelor's degree (1 major) Economathematics (2024)
Bachelor's degree (1 major) Economathematics (2025)
Bachelor's degree (1 major) Economathematics (2026)