

GEW-MF03 Numerical Analysis and Modeling		Number of credit points (LP): 12		
Module type (mandatory or elective module)	Elective module			
Contents and qualification objectives of the module	<p>Contents The module focuses on analytical and numerical methods and modeling approaches in the geosciences. Typical geoscientific problems are worked on. The module contents deepen statistical analyses, time series analysis and signal processing, analysis of spatial and directional data, problems of image processing, methods of remote sensing and their application and geoscientific processes described by models.</p> <p>Qualification goals Students</p> <ul style="list-style-type: none"> - acquire advanced skills in geoscience data analysis - critically analyze results of data analysis and modeling approaches - acquire the ability to translate observations from the field, laboratory analyses, and geoscience databases into models to understand Earth system processes at different length and time scales - deepen their understanding of geoscience processes through remotely-sensed observations and modeling approaches 			
Module examination (number, form, scope)	An examination of the following forms: Portfolio examination, consisting of: Report (15-20 pages) and corresponding presentation (20-30 minutes). Oral exam, 30-45 minutes Written exam, 90-120 minutes			
Self-learning time (in time hours)	240			
Events (teaching forms)	Contact time (in semester hours)	Secondary examination (number, form, scope)		Partial module examination accompanying the course (number, form, scope)
		For the completion of the module	For admission to the module examination	
Lecture and exercise (lecture and exercise)	2V+2T	-	Exercises (80%)	-
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Frequency	Winter semester and summer semester			
Prerequisite for participation in the module	Recommended: MC03 Data Analysis and Statistics and Advanced Geological Skills.			
Teaching unit(s)	Geosciences			