GEW-MF12 Seismological Data Science			Number of credit points (LP): 12			
Module type	Advanced mo	dule				
(mandatory or						
elective module)						
Contents and	Contents					
qualification objectives of the module	Acquisition of data e.g. with seismometers and rotation sensors, seismological data formats, data conversion, typical steps in data evaluation (e.g. read in, transform), data processing and visualization. The course includes an introduction to Python programming. Examples of data processing include topics such as filters, convolution, Fourier transform, the localization of volcanic seismological signals, event types, automatic trigger systems, hazard properties of seismic sources, the propagation medium, and site effects, the hazard integral, and development of seismic scenarios for large cities.					
	Qualification goals					
	Students					
Module examination	 learn the Python programming language apply the Obspy and Pyrocko seismological packages to various seismological issues. deepen their process-oriented understanding of data collected in the Earth system are able to transfer observations from the field and information from databases into models can apply digital signal processing, for example, on the basis of seismological recordings of volcanoes or in the context of probabilistic earthquake hazard analysis and the seismic risk chain understand current research approaches and the state of the art in the field of seismology. handle and visualize uncertainties (aleatory and epistemic) 					
(number, form,	Portfolio examination, consisting of: Report (15-20 pages) and corresponding presentation (20-30					
scope)	minutes).					
Oral exam, 30-45 minutes						
	Written exam, 90-120 minutes					
Self-learning time	ning time 240					
(in time hours)						
					-	
Events (teaching forms)		Contact time (in	Secondary examination (number, form, scope)		Partial module examination accompanying the course	
		semester hours)				
			For the	For admission to	(number, form, scope)	
			completion of	the module		
			the module	examination		
Lecture and exercise I (lecture and exercise)		2V+2T	-	-	-	
Lecture and exercise II (lecture and 2		2V+2T	-	-	-	
exercise)						
F			xx7.			
Frequency			Winter semester (V+T I) and summer semester (V+T II)			
Prerequisite for participation in the module			None			
l'eaching unit(s)			Geosciences			