

GEW-MF02 Sedimentary Processes		Number of credit points (LP): 12					
Module type (mandatory or elective module)	Advanced module						
Contents and qualification objectives of the module	<p><b>Contents</b></p> <p>The students deepen knowledge of the methods for the investigation of sedimentary sequences. The feedbacks between different components in the Earth system, as well as the role of allogenic and autogenic processes with respect to sedimentation are analyzed. Students will learn to integrate data from different methodological approaches and scales of resolution, and will be introduced to modeling sedimentary systems to explore how different processes can influence the distribution of sedimentary rocks both at the surface and in the subsurface. Understanding the stratigraphic classification of stratigraphic sequences, as well as these sedimentation models, leads to an enhanced understanding of Earth system interactions. In addition, sedimentation models are very relevant to applied fields (exploration, energy, disposal) because they help predict and constrain the spatial distribution of rock properties in the subsurface. Through weekly exercises as well as case studies, students acquire conceptual as well as practical knowledge in the application of basin analysis principles. Topics and case studies are reinforced through reading of scientific papers, followed by group discussions and presentation of research topics to groups of students. A field exercise allows the concepts to be put into practice.</p> <p><b>Qualification goals</b></p> <p>Students</p> <ul style="list-style-type: none"> <li>- are able to transfer observations from the field, information from databases and results from laboratory analyses into models</li> <li>- are able to synthesize complex geoscientific information</li> <li>- gain the ability to integrate data across collection methods</li> <li>- will be introduced to subsurface analysis of reservoirs and their multiscale properties, and their applications in geothermal, CCS, and other fields</li> </ul>						
Module examination (number, form, scope)	<p>An examination of the following forms:</p> <p>Portfolio examination, consisting of: Report (15-20 pages) and corresponding presentation (20-30 minutes).</p> <p>Oral exam, 30-45 minutes</p> <p>Written exam, 90-120 minutes</p>						
Self-learning time (in time hours)	200						
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%)	-			
Seminar and exercise (seminar and exercise)	2S+2T	-	Exercises (80%)	-			
Field exercise (exercise)	5 days	Report (10-12 pages)	-	-			
Frequency		Winter semester and summer Semester (over two semesters, start Winter semester)					
Prerequisite for participation in the module		None					
Teaching unit(s)		Geosciences					