

Module Nr.	Credits	Workload	Semester	Frequency	Duration
SE-C-3	9 CP	270 h	1	Yearly (WS)	1 Semester
<b>Courses</b>			<b>Contact time</b>	<b>Self-study</b>	<b>Group size</b>
a) Stress field and rock mass behavior			2 h/week	60 h	---
b) Seminar in basic geology			2 h/week	30 h	
c) Structural geology field camp			8 days (60 h)	60 h	
<b>Geology of the Earth's Crust</b>					
<b>Learning outcomes</b>					
After successful completion of the course the students are					
<ul style="list-style-type: none"> <li>familiar with rock and rock mass behaviour and the sources of stress in the earth's crust. They know how to estimate and measure rock mass stress.</li> <li>acquainted with different applications of structural geology.</li> <li>know the most important mechanisms leading to basin formation and subsidence.</li> <li>able to elaborate a coherent geological model from field data.</li> </ul>					
<b>Content</b>					
a) Stress field and rock mass behavior					
Definition of stress, rock deformation, rock failure, rock mass definition, sources of stress in the earth crust, methods of stress measurement and stress modelling, determination of stress alterations and stress redistribution.					
b) Seminar in basic geology					
The aim of the lecture is to consolidate and deepen fundamental aspects in structural geology. During the two first sessions basic notions are recalled by the instructor. The following sessions consist of oral presentations by the students. The topics to be presented are selected by the participants according to a list of scientific papers proposed by the instructor. In addition, the writing of an essay following the oral presentation is required.					
c) Structural geology field camp					
The exercise involves the structural/geological mapping in fine detail of selected areas using traditional techniques and tools (i.e. compass, hammer, lens...). As such the field camp aims to strengthen field work experience and sharpen geologist skills. In the course of the writing of the report, the student will learn how to analyse field data and how to extract from them a coherent geological synthesis					
<b>Teaching Methods / Language</b>					
a) Lectures (2 h/week) /English					
b) Lectures (2 h/week) /English					
c) 8 day training in the field /English					
<b>Modes of assessment</b>					
Written Exam (3 h)					
Written essay (20 h).					

<p><b>Requirements for the award of credit points</b></p> <p>Pass the written examination</p>
<p><b>Module applicability (in other study programs)</b></p> <p>-</p>
<p><b>Weight of the mark for the final score</b></p> <p>7.5 %</p>
<p><b>Module coordinator and lecturer(s)</b></p> <p>a) Prof. Dr. T. Backers (coordinator)</p> <p>b) Prof. Dr. C. Pascal</p> <p>c) Prof. Dr. C. Pascal</p>
<p><b>Other information</b></p> <p>Literature: Davis and Reynolds, 1996. Structural Geology of Rocks and Regions, John Wiley &amp; Sons. Allen and Allen, 2013. Basin Analysis: Principles and Application to Petroleum Play Assessment, 3rd Edition, Wiley-Blackwell. Twiss and Moores, 1992 (2007). Structural Geology, Freeman</p>