DEPARTMENT OF CIVIL ENGINEERING

Course Details				
Code	**Academic Year**			**Semester**
BAU356	3			W.S-S.S
Title	**T**	**A**	**L**	**ECTS**
Engineering Geology	3	1	1	6

Language	German					
Level	**Undergraduate**	*	**Graduate**		**Postgraduate**	
Department / Program	Civil Engineering					
Forms of Teaching and Learning	Formal					
Course Type	**Compulsory**		**Elective**	*		
Objectives	Learning the basic structure of the earth, plate tectonic theory, rock formation of geological processes, corresponding minerals and rock types, soil formation, topographic mapping and geological mapping in the context of technical applications.					
Content	Introduction of the minerals and rocks that make up the earth's crust. The aim is to recognize geological structures and to interpret geological maps and sections. Interaction of applications such as tunnels, dams, highways, foundations, deep excavation with earth crust environments; Special topics such as groundwater and surface water effects, material selection are dealt with. With regard to civil engineering, the behavior and load-bearing capacity of the earth's crust environments are given as a summary. Understand the effects of geological environmental conditions on various applications and assess natural disaster risks such as earthquakes and landslides. The aim is to understand the physical and mechanical properties of basic materials, their classification and their importance for the application.					
Prerequisites						
Coordinator						
Lecturer(s)						
Assistant(s)						
Work Placement						

Recommended or Required Reading	
Books / Lecture Notes	
Other Sources	

Additional Course Material	
Documents	Tarbuck E.J.,Lutgens, F. K.., Tasa, D.G. (2012). Earth An Introduction to Physical Geology, 11th Edition, Pearson, ISBN13:978-0321820945 ISBN-10:0321820940
Assignments	
Exams	

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Course Composition		
Mathematics und Basic Sciences		%
Engineering		%
Engineering Design		%
Social Sciences		%
Educational Sciences		%
Natural Sciences		%
Health Sciences		%
Expert Knowledge		%

Assessment		
Activity	**Count**	**Percentage (%)**
Midterm Exam	1	40
Quiz		
Assignments		
Attendance		
Recitations		
Projects		
Final Exam	1	60
	Total	**100**

ECTS Points and Work Load			
Activity	**Count**	**Duration**	**Work Load (Hours)**
Lectures	14		70
Self-Study			
Assignments			
Presentation / Seminar Preparation			
Midterm Exam	2		21
Recitations	14		56
Laboratory	7		
Projects			
Final Exam			
		Total Work Load	**168**
		ECTS Points (Total Work Load / Hour)	**6**

Learning Outcomes	
1	Discuss the theory of plate tectonics and plate boundaries, relate plate tectonics to earthquakes and faults, identify the structure of the earth and geological time, and apply relative dating principles
2	Describe metamorphic, magmatic, sedimentary processes & compares the corresponding common minerals & rocks types

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3	Identification of weathering processes, soil formation, soil profile and nomenclature based on the particle size of the soil;
4	Interpret topographical maps and geological maps, use the information from geological and topographic maps to develop geological cross-sections, and identify basic geological structures on cross-sections.
5	Discussing groundwater and surface water concepts in geology, relating surface water to soil deposits, relating geological concepts to technical applications;
6	Demonstrate the skills of self-directed learning and clarify one of the current problems in geosciences (geology).
7	Act effectively as a member of your group to relate geology to one of the technical applications and communicate in both written report and presentation format.
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Weekly Content	
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Contribution of Learning Outcomes to Program Objectives (1-5)

	P1	P2	P3	P4	P5	P6	P7
1							
2							
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Contribution Level	1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High
Compiled by:	
Date of Compilation:	