DEPARTMENT OF CIVIL ENGINEERING

Course Details					
Code			**Academic Year**		**Semester**
BAU355			3		W.S-S.S
Title			**T**	**A**	**L**	**ECTS**
Geodesy and Geoinformatics			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 spatial concepts that are important for the planning, construction and operation of civil engineering projects and activities, the concepts and principles of the location and arrangement of points on the surface of the three-dimensional earth to solve the problem of the transformation of the curved earth surface on a flat map or a computer screen, modern measuring and positioning systems such as GPS and GNSS, the basics and types of GIS.				
Content	Physical earth, coordinate systems, projection and map information, measurement concept and errors, satellite-based measurement methods such as terrestrial and GNSS and remote sensing methods as well as modern measuring instruments used in these methods, height measurements, sections as well as area and volume calculations, concept of the geographic information system and its areas of application , Photogrammetric measurement methods, deformation measurements, It includes basic information such as reading classic map information and related field and laboratory applications.				
Prerequisites					
Coordinator					
Lecturer(s)					
Assistant(s)					
Work Placement					
Recommended or Required Reading					
Books / Lecture Notes	Anderson, J.M., Mikhail, E.M., "Surveying: Theory and Practice", WCB/McGraw-Hill, Boston, c1998				
Other Sources					
Additional Course Material					
Documents					
Assignments					
Exams					
Course Composition					

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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	5	70
Self-Study	14	3	42
Assignments			
Presentation / Seminar Preparation			
Midterm Exam	1	2	10
Recitations			
Laboratory			
Projects			
Final Exam	1	2	15
Total Work Load			**137**
ECTS Points (Total Work Load / Hour)			**6**

Learning Outcomes	
1	Discussion and explanation of the survey concept, the causes and types of errors in the survey
2	Calculate errors and solve basic calculations in the survey
3	Recognize the use of 3D locations in civil engineering

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4	Describe the concept of GPS and organize the use of GPS in different applications
5	Define the concept, components and data types of GIS
6	Prove basic skills and knowledge in geo-data production
7	Develop maps with spatial analysis using GIS.
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Weekly Content	
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15	

Contribution of Learning Outcomes to Program Objectives (1-5)						
	P1	P2	P3	P4	P5	P6	P7
1							
2							
3							
4							
5							
6							
7							
8							

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9						
10						
11						
12						
Contribution Level	1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High					
Compiled by:						
Date of Compilation:						