DEPARTMENT OF CIVIL ENGINEERING
COURSE SYLLABUS

Course Details				
Code	**Academic Year**			**Semester**
BAU425	4			Spring
Title	**T**	**A**	**L**	**ECTS**
Experimental Soil Mechanics		2		2

Language	German					
Level	**Undergraduate**	✓	**Graduate**		**Postgraduate**	
Department / Program	Civil Engineering					
Forms of Teaching and Learning	Formal					
Course Type	**Compulsory**	✓	**Elective**			
Objectives	This course aims to teach the fundamental principles of soil mechanics experiments, ensure the analysis of laboratory experiments, and demonstrate how experimental data are used in engineering applications.					
Content	Ders, zemin mekaniği laboratuvar deneylerinin teorik temellerini, deneysel yöntemleri ve uygulamalarını içermektedir. Ayrıca, zeminlerin fiziksel ve mekanik özelliklerinin belirlenmesi, laboratuvar deneylerinde veri toplama ve analiz teknikleri ile mühendislik projelerine yönelik değerlendirmeleri kapsamaktadır.					
Prerequisites	--					
Coordinator	Prof.Dr. Murat HAMDERİ					
Lecturer(s)	Prof.Dr. Murat HAMDERİ					
Assistant(s)	--					
Work Placement	--					

Recommended or Required Reading	
Books / Lecture Notes	Bardet, J.P., 1997, Experimental Soil Mechanics, Prentice Hall, USA. Bowles, J. E. (1996). Foundation Analysis and Design. McGraw-Hill. Das, B. M. (2013).
Other Sources	

Additional Course Material	
Documents	Lecture slides, script exercises, script formula collection
Assignments	
Exams	Midterm Exam, Final Exam

Course Composition		
Mathematics and Basic Sciences		%
Engineering	50	%
Engineering Design	20	%

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Social Sciences		%
Educational Sciences		%
Natural Sciences		%
Health Sciences		%
Expert Knowledge	30	%

Assessment

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

ECTS Points and Work Load

Activity	Count	Duration	Work Load (Hours)
Lectures			
Self-Study	12	2	24
Assignments			
Presentation / Seminar Preparation			
Midterm Exam			
Recitations	1	2	2
Laboratory	14	2	28
Projects			
Final Exam	1	2	2
		Total Work Load	**56**
		ECTS Points(Total Work Load / Hour)	**2**

Learning Outcomes

1	Explains the fundamental principles of soil mechanics laboratory experiments.
2	Determines the physical and mechanical properties of soils using experimental methods.
3	Analyzes experimental results and applies them to engineering practices.
4	Interprets laboratory data and prepares technical reports.
5	

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Weekly Content	
1	Introduction to soil mechanics laboratory and experimental methods
2	Soil classification tests (sieve and hydrometer analysis)
3	Natural water content and unit weight tests
4	Consolidation tests and settlement analysis
5	Direct shear test and triaxial compression tests
6	Compaction and permeability tests
7	Analysis of experimental data and engineering applications
8	Midterm Exam
9	Soil strength and bearing capacity tests
10	Soil dynamics and seismic tests
11	Liquefaction potential of soils and its evaluation
12	Integration of laboratory data into engineering design
13	Case studies and preparation of laboratory reports
14	Computer-aided analysis of experimental data
15	General evaluation and project presentations

Contribution of Learning Outcomes to Program Objectives(1-5)

	P1	P2	P3	P4	P5	P6	P7
1	4	2	1	1	3	5	2
2	4	2	1	1	3	5	2
3	4	2	1	1	3	5	2
4	4	2	1	1	3	5	2
5							
6							
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10							
11							
12							

Contribution Level	1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High
https://obs.tau.edu.tr/oibs/bologna/progLearnOutcomes.aspx?lang=tr&curSunit=5728	
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Date of Compilation:	02.02.2026