



COURSE INFORMATION FORM

Course Name	Course Code
SOIL MECHANICS II	151416340

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	3	0	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	2	2		

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	Soil Mechanics I
Objectives of the Course	This course, in addition to the necessary theoretical knowledge, including the Soil Mechanics I course, aims to provide students with the ability to analyze, evaluate, and produce solutions to the problems they may encounter in geotechnical engineering and to reach design parameters from laboratory experiments.
Short Course Content	The content of the course is as follows: Stress-strain behavior of soils and shear strength, experimental determination of soil shear strength, lateral earth pressure calculation, design of earth retaining structures, and slope stability.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Ability to identify, define, formulate and solve complex engineering problems in Civil Engineering and related fields by selecting and applying appropriate analysis and modeling methods.	1, 2, 5	1, 2	A, D
2 Ability to reveal, evaluate, and interpret the engineering properties of soils.	1, 2, 5	1, 2, 3	A, D
3 Ability to design different soil support structures.	1, 2, 5	1, 2, 10	A, D
4 Ability to analyze the stability of soil slopes.	1, 2, 5	1, 2, 10	A, D
5 -			
6 -			
7 -			
8 -			

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	In general, books on soil mechanics are within the scope of this course.
Supporting References	<ol style="list-style-type: none"> 1. Kumbasar V., Kip F., (1985), Zemin Mekaniği Problemleri, Çağlayan Yayınevi: İSTANBUL 2. Özaydın K., Zemin Mekaniği, Birsen Yayınevi,: İSTANBUL 3. Uzuner B.Ali., Temel Zemin Mekaniği, Birsen Yayınevi:İSTANBUL 4. Craig, R.F., (1989), Soil Mechanics, Van Nostrand, Reinhold, 410p. 5. Berry, L and Reid, D., 1987, An Introduction to Soil Mechanics, McGraw-Hill, 317p. 6. Kovacs, W.D., 1981 An Introduction to Geotechnical Engineering, Prentice-hall, 733
Necessary Course Material	Data show machine and Geotechnical laboratory.

Course Schedule	
1	Stresses in the soil and the pole point method
2	Shear strength of soils
3	Failure criteria of Mohr-Coulomb
4	Shear strength tests (shear box test, unconfined compression test, veyn test and triaxial compression test)
5	Shear strength tests (shear box test, unconfined compression test, veyn test and triaxial compression test)
6	Lateral earth pressure theories
7	Lateral earth pressure calculations
8	Mid-Term Exam
9	Retaining walls
10	Stability checks of gravity and cantilever walls
11	Stability checks of gravity and cantilever walls
12	Design of gravity and cantilever walls
13	Sheet pile curtain design
14	Slope stability and analysis methods
15	Slope stability and analysis methods
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	14	2	28
Homework	4	5	20
Quiz Exam	-	-	-
Studying for Quiz Exam	-	-	-
Oral exam	-	-	-
Studying for Oral Exam	-	-	-
Report (Preparation and presentation time included)	-	-	-
Project (Preparation and presentation time included)	-	-	-
Presentation (Preparation time included)	-	-	-
Mid-Term Exam	1	1.5	1.5
Studying for Mid-Term Exam	1	15	15
Final Exam	1	1.5	1.5
Studying for Final Exam	1	15	15
Total workload			123
Total workload / 30			4.1
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Homework	10
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	5
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	5
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.	1
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	1
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	5
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	2
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	1
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	2
9	Understanding of professional and ethical issues and taking responsibility	2
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.	1
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	1

LECTUTER(S)				
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Signature(s)				

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