



HASAN KALYONCU UNIVERSITY
Faculty of Engineering
Course Description Form

COURSE: Soil Mechanics 1					
CODE: CE361		SEMESTER: FALL			
LANGUAGE: ENGLISH		TYPE: COMPULSORY			
PRE-REQUISITES: - CO-REQUISITES: -		THEORY	PRACTICAL	CREDIT	ECTS
WEEKLY HOURS: 4		2	2	3	5

CONTENT OF THE COURSE:

Physical properties of soils. Soil classification, soil structure and moisture effects. Total and effective stress calculation. Soil permeability and flow. Executing some basic laboratory experiments: Sieve analysis, Atterberg Limits, and Proctor compaction.

OBJECTIVE OF THE COURSE:

This course aims to teach students the main concepts in soil mechanics. It is aimed to make the students the capable of making soil classification, determining basic soil properties and calculating flow in soil.

WEEKLY SCHEDULE AND PRE-STUDY PAGES

Week	Topics
1	Phase relations
2	Phase relations
3	Soil Classification
4	Sieve Analysis Experiment Explanation and Execution
5	Atterberg Limits Experiment Explanation and Execution
6	Soil Compaction
7	Proctor Compaction Experiment Explanation and Execution
8	Midterm week
9	Total Stress in Soils
10	Effective Stress in Soils
11	Darcy's law and seepage
12	Darcy's law and seepage
13	Flow Nets
14	Flow Nets

TEXTBOOK:

- Craig, R. F. (1997) Soil Mechanics (sixth or later edition)

EVALUATION SYSTEM:		
IN-TERM STUDIES	QUANTITY	PERCENTAGE (%)
Midterm Exam	1	35
Homework	-	-
Laboratory works	3	15
Quiz	-	-
Final Exam	1	50
TOTAL	5	100
CONTRIBUTION OF INTERM STUDIES TO OVERALL GRADE	4	50
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE	1	50
TOTAL	5	100

COURSE CATEGORY:	PERCENTAGE (%)
Mathematics and Basic Sciences	30
Engineering	60
Engineering Design	10
Social Sciences	-

TABLE OF ECTS / WORKLOAD:			
Activities	QUANTITY	Duration (Hour)	Total Workload
Course Duration	13	4	52
Hours for off-the-classroom study (Pre-study, practice)	14	4	56
Laboratory works	3	10	30
Mid-term	1	2	2
Final examination	1	2	2
Homework	-	-	-
Quiz	-	-	-
Total Work Load			142
Total Work Load / 30			4,7
ECTS Credit of the Course			5

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
LO1	3	1	0	0	2	0	0	0	0	0	0
LO2	1	1	0	0	2	0	0	0	0	0	0
LO3	2	2	0	0	0	0	0	0	0	0	0
LO4	3	3	0	0	0	0	0	0	0	0	0
LO5	1	0	0	0	3	0	3	0	0	0	0
	PO: Program Outcomes LO: Learning Outcomes Values: 0: None 1: Low 2: Medium 3: High										

INSTRUCTOR(S):	Asst. Prof. Dr. Volkan Kalpakcı
FORM PREPARATION DATE:	22.05.2019

LEARNING OUTCOMES OF THE COURSE:	PROGRAM OUTCOMES:
<p>LO1: Physical properties of Soils (Phase relations)</p> <p>LO2: Soil structure and classification</p> <p>LO3: Total and effective stress calculations in soils</p> <p>LO4: Soil Permeability and flow in the soils</p> <p>LO5: Basic laboratory experiments (Sieve analysis, Atterberg limits, Proctor compaction)</p>	<p>PO1: Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied knowledge in these areas in complex engineering problems.</p> <p>PO2: Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.</p> <p>PO3: Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.</p> <p>PO4: Ability to devise, select, and use modern techniques and tools needed for analyzing and solving complex problems encountered in engineering practice; ability to employ information technologies effectively.</p> <p>PO5: Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex engineering problems or discipline specific research questions.</p> <p>PO6: Ability to work efficiently in intra-disciplinary and multi-disciplinary teams; ability to work individually.</p> <p>PO7: Ability to communicate effectively in Turkish, both orally and in writing; knowledge of a minimum of one foreign language; ability to write effective reports and comprehend written reports, prepare design and production reports, make effective presentations, and give and receive clear and intelligible instructions.</p> <p>PO8: Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself.</p> <p>PO9: Consciousness to behave according to ethical principles and professional and ethical responsibility; knowledge on standards used in engineering practice.</p> <p>PO10: Knowledge about business life practices such as project management, risk management, and change management; awareness in entrepreneurship, innovation; knowledge about sustainable development.</p> <p>PO11: Knowledge about the global and social effects of engineering practices on health, environment, and safety, and contemporary issues of the century reflected into the field of engineering; awareness of the legal consequences of engineering solutions.</p>