COURSE DESCRIPTION FORM			
Course Code and Title	CE361 SOIL MECHANICS I		
Semester	5		
Catalog description	Introduction. Recap of some topics in engineering geology. Soil formation and composition. Soil phase relationships. Classification of soils. Soil compaction. Water in soils. Permeability, flow nets, seepage, effective stress concepts. Effect of seepage forces on the effective stress. Stress changes due to external surface loads. Elastic settlements. Consolidation theory, consolidation settlement, consolidation time.		
Required reading	Geoteknik Mühendisliğine Giriş : Introduction to Geotechnical Engineering, Robert D. Holtz | William D. Kovacs | Thomas C. Sheahan		
Recommended reading	Zemin Mekaniği, Kutay Özaydın Geoteknik Bilgisi 1 Çözümlü Problemlerle Zeminler Ve Mekaniği, Akın Önalp Geoteknik Mühendisliği İlkeler ve Uygulamalar, Donald P. Coduto, Çeviri: Kamil Kayabalı, Murat Mollamahmutoğlu		
ECTS	5		
Prerequisites and co-requisites	No prerequisite Required attendance to lectures is at least 70%		
Compulsory/Elective	Technical course		
Language of instruction	English		
Aim of course	Presentation of basic soil mechanics principles to students.		
Learning outcomes of the course unit	1. Be able to carry out the tests necessary for identification and classification of soils 2. To be able to determine the seepage and corresponding stress changes in the dams and other geotechnical structures 3. Learning the concept of effective stress 4. Stress distribution and elastic (seismic) settlements for homogeneous soil layers 5. Calculation of quantity and duration of consolidation settlement		
Mode of delivery	The mode of delivery of this course is face to face.		
Course content	Week 1 Revision of some topics of introduction and engineering geology Week 2 Soil formation and composition, phase relations Week 3 Definition and classification of floors Week 4 Soil Compaction Week 5 Water in soil, permeability Week 6 Flow nets, infiltration in dams Week 7 Midterm Week 8 Effective stress concept, seepage forces Week 9 Stresses due to external loads Week 10 Stresses due to external loads Week 11 Midterm Exam / Lab. HW and Quizes Week 12 Elastic settlement and consolidation settlement concepts Week 13 Consolidation settlement Week 14 Consolidation time-settlement relationship Week 15 Consolidation time-settlement relationship		
Planned learning activities and teaching methods	2 hours theoretical, 1 hour practical lectures per week (3+1) Labaratory study, reading Quizzes Lab. studies and lab. report preparation Homework Midterm exam Final exam		
Assessment methods and criteria		Quantity	Percentage (%)

Mid-terms	2	40
Assignment	5	5
Exercises	5	10
Projects	-	-
Practice	-	-
Quiz	5	5
Contribution of In-term Studies to Overall Grade %		60
Contribution of Final Examination to Overall Grade (%)		40
Attendance		

Workload

Efficiency	Total Week Count	Weekly Duration (in hour)	Total Workload in Semester
Theoretical Study Hours of Course Per Week	14	3	42
Practicing Hours of Course Per Week	14	1	28
Reading	14	1	14
Searching in Internet and Library	0	0	0
Designing and Applying Materials	0	0	0
Preparing Reports	5	3	15
Preparing Presentation	0	0	0
Presentation	0	0	0
Mid-Term and Studying for Mid-Term	4	5	20
Final and Studying for Final	1	5	5
Other	0	0	0
Total Workload:			124
Total Workload / 25:			4.96
ECTS:			5

Course's contribution to program

No	Program Learning Outcomes	1	2	3	4	5
1	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.				X	
2	Ability to identify, formulate, and solve complex civil engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.			X		
3	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.			X		
4	Ability to devise, select, and use modern techniques and tools needed for analyzing and			X		

	solving complex problems encountered in civil engineering practice; ability to employ information technologies and to use at least one computer programming language effectively.						
5	Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex civil engineering problems or discipline specific research questions.				X		
6	Ability to work efficiently in intra-disciplinary and multi-disciplinary teams.			X			
7	Ability to work individually.				X		
8	Ability to communicate effectively in Turkish, both orally and in writing; ability to write effective reports and comprehend written reports.	X					
9	Knowledge of English of B1 level according to Common European Framework of Reference.			X			
10	Prepare design and production reports, make effective presentations, and give and receive clear and intelligible instructions.	X					
11	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.		X				
12	Consciousness to behave according to ethical principles and professional and ethical responsibility.		X				
13	Knowledge on standards used in civil engineering practice.			X			
14	Knowledge about business life practices such as project management, risk management, and change management.	X					
15	Awareness in entrepreneurship, innovation; knowledge about sustainable development.	X					
16	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.			X			
17	Awareness of the legal consequences of engineering solutions.		X				

Name of lecturer(s) and contact information	Prof. Dr. Yüksel YILMAZ; http://websitem.gazi.edu.tr/site/yyuksel Prof. Dr. Sami Oğuzhan AKBAŞ; http://websitem.gazi.edu.tr/site/soakbas Doç. Dr. Ayhan GÜRBÜZ; http://www.websitem.gazi.edu.tr/site/agurbuz Dr. Erhan TEKİN, http://www.websitem.gazi.edu.tr/site/etekin