

COURSE DESCRIPTION FORM			
Course Code and Title	CE415 FOUNDATION ENGINEERING II		
Semester	7		
Catalog description	Bearing capacity and settlement of shallow foundation, pile types, bearing capacity of settlement of single piles and pile groups, pile loading tests		
Required reading	Soil Investigation and Foundation Design by , Prof. Dr. Sönmez YILDIRIM, Birsen Publisher, 2002		
Recommended reading	Principle of Soil Mechanics, Prof.Dr. Bayram Ali UZUNER, Teknik Publisher, 2001		
ECTS	4		
Prerequisites and co-requisites	Prerequisite of this course is: IM364 SOIL MECHANICS II Required attendance to lectures is at least 70% of total term hours.		
Compulsory/Elective	Technical elective course		
Language of instruction	English		
Aim of course	The aim of this course to teach how to analyze piles		
Learning outcomes of the course unit	Upon completion of the course student should be able to; 1. design a single pile in soil/rock under vertical load, 2.design a single pile in soil/rock under lateral load , 3. design pile groups		
Mode of delivery	The mode of delivery of this course is face to face.		
Course content	1. Introduction to bearing capacity and settlement of shallow foundation 2. Pile types and parameter affecting to choose pile type 3. Design of single piles and settlement under vertical load 4. Design of single piles and settlement under lateral load 5. Design of piles embedded into rocks 6. Pull-out capacity of single piles 7. 1. Midterm 8. Negative skin resistance of single piles 9. Design of pile groups and settlement under vertical load 10. Design of pile groups and settlement under vertical load 11. 2. Midterm + design of laterally loaded piles and their lateral deflection 12. Design of laterally loaded piles and their lateral deflection 13. Design of laterally loaded piles and their lateral deflection 14. Pile loading tests 15. Pile loading tests		
Planned learning activities and teaching methods	3 lecture hours per week (3+0) Reading Internet browsing, library work Reports Midterm exam and required works Final exam and required works Presentation Designing and implementing of materials		
Assessment methods and criteria		Quantity	Percentage (%)
	Mid-terms	2	40
	Assignment	5	10
	Exercises	-	-
	Projects	1	10
	Practice	-	-
	Quiz	-	-

	Contribution of In-term Studies to Overall Grade %		60						
	Contribution of Final Examination to Overall Grade (%)		40						
	Attendance								
Workload	Work activity	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	0	0	0					
	Reading	14	1	14					
	Searching in Internet and Library	4	1	4					
	Designing and Applying Materials	10	2	20					
	Preparing Reports	1	2	2					
	Preparing Presentation	1	2	2					
	Presentation	1	1	1					
	Mid-Term and Studying for Mid-Term	2	2	4					
	Final and Studying for Final	2	5	10					
	Other	0	0	0					
	Total Workload:			99					
	Total Workload / 25:			3,96					
ECTS:			4						
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.							
	4	Ability to devise, select, and use modern techniques and tools needed for analyzing and 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.							
	6	Ability to work efficiently in intra-disciplinary and multi-disciplinary teams.							
	7	Ability to work individually.							
	8	Ability to communicate effectively in Turkish, both orally and in writing;							

		ability to write effective reports and comprehend written reports.						
	9	Knowledge of English of B1 level according to <u>Common European Framework of Reference</u> .						
	10	Prepare design and production reports, make effective presentations, and give and receive clear and intelligible instructions.						
	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.						
	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.						
	15	Awareness in entrepreneurship, innovation; knowledge about sustainable development.						
	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.						
	17	Awareness of the legal consequences of engineering solutions.						
Name of lecturer(s) and contact information	Prof. Dr. Yüksel Yılmaz, yyuksel@gazi.edu.tr Doç. Dr. Sami Oğuzhan Akbaş, soakbas@gazi.edu.tr Doç. Dr. Ayhan Gürbüz, agurbuz@gazi.edu.tr							