

TOROS ÜNİVERSİTESİ

Faculty Of Engineering
Civil Engineering (English)

Course Information

PILED FOUNDATIONS					
Code	Semester	Theoretical	Practice	National Credit	ECTS Credit
		Hour / Week			
CVE433	Fall	3	0	3	3

Prerequisites and co-requisites	NONE
Language of instruction	Turkish
Type	Elective
Level of Course	Bachelor's
Lecturer	Prof. Dr. Aziz ERTUNÇ
Mode of Delivery	Face to Face
Suggested Subject	NONE
Professional practise (internship)	None
Objectives of the Course	Teaching of fundamentals of design and practice of pile foundations and multiple rows of anchored walls (sheet pile, diaphragm and piled retaining) are aimed within the scope of this course. The analysis and Essentials of pile foundations and retaining walls by means of contemporary numerical techniques is a priority in this course.
Contents of the Course	Analytical and numerical analysis techniques will be taught to the students by the help of sample problem solutions during the course. Besides, essentials of pile foundation and retaining wall projects will be covered with sample project presentations.

Learning Outcomes of Course

#	Learning Outcomes
1	Introduction of pile foundations and retaining wall types.
2	Interpretation of soil and superstructure load data and to become aware of the cases where pile foundations are preferred over spread foundations.
3	Choose the most suitable pile foundation or retaining wall type for the engineering problem being analyzed.
4	Perform bearing capacity and settlement calculations of pile foundations under static axial and dynamic-equivalent static lateral load combinations.

Course Syllabus

#	Subjects	Teaching Methods and Technics
1	General criteria for foundation system choice, pile foundation types, classification of pile foundations, case histories	
2	Axial load carrying capacity of single piles (conventional method)	
3	Examples to the analysis of axial load carrying capacity using conventional method	
4	Lateral load carrying capacity of single piles (conventional methods: Broms etc)	
5	Example solutions for lateral load carrying capacity using conventional method	
6	Establishment of pile group layouts	
7	Load carrying capacity of pile groups and settlement analyses	
8	MidTerm	

9	Examples for pile group analyses	
10	Numerical analyses of single and group piles (finite difference solutions using Q-z, t-z ve p-y curves)	
11	Examples to numerical analyses of pile foundations	
12	Decision criteria for retaining wall systems, lateral load analyses of piled and continuous section retaining walls (sheet pile and diaphragm walls)	
13	Decision criteria for retaining wall systems, lateral load analyses of piled and continuous section retaining walls (sheet pile and diaphragm walls)	
14	Examples to the analyses of retaining systems under lateral loads	
15	Examples to the analyses of retaining systems under lateral loads	
16	Final Exam	

Course Syllabus

#	Material / Resources	Information About Resources	Reference / Recommended Resources
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Method of Assessment

#	Weight	Work Type	Work Title
1	40%	Mid-Term Exam	Mid-Term Exam
2	60%	Final Exam	Final Exam

Relationship between Learning Outcomes of Course and Program Outcomes

#	Learning Outcomes	Program Outcomes	Method of Assessment
1	Introduction of pile foundations and retaining wall types.	1,2	1
2	Interpretation of soil and superstructure load data and to become aware of the cases where pile foundations are preferred over spread foundations.	1,2	1
3	Choose the most suitable pile foundation or retaining wall type for the engineering problem being analyzed.	1,2	1
4	Perform bearing capacity and settlement calculations of pile foundations under static axial and dynamic-equivalent static lateral load combinations.	2	2

PS. The numbers, which are shown in the column Method of Assessment, presents the methods shown in the previous table, titled as Method of Assessment.

Work Load Details

#	Type of Work	Quantity	Time (Hour)	Work Load
1	Course Duration	14	3	42
2	Course Duration Except Class (Preliminary Study, Enhancement)	14	3	42
3	Presentation and Seminar Preparation	0	0	0
4	Web Research, Library and Archival Work	0	0	0
5	Document/Information Listing	0	0	0
6	Workshop	0	0	0
7	Preparation for Midterm Exam	1	2	2
8	Midterm Exam	1	1	1
9	Quiz	0	0	0
10	Homework	0	0	0
11	Midterm Project	0	0	0
12	Midterm Exercise	0	0	0

13	Final Project	0	0	0
14	Final Exercise	0	0	0
15	Preparation for Final Exam	1	2	2
16	Final Exam	1	1	1
				90