

FOUNDATIONS DESIGN

1	Course Title:	FOUNDATIONS DESIGN	
2	Course Code:	INS4073	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	4	
6	Semester:	7	
7	ECTS Credits Allocated:	5.00	
8	Theoretical (hour/week):	3.00	
9	Practice (hour/week):	1.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Dr. Öğr. Üyesi YEŞİM SEMA ÜNSEVER	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	unsever@uludag.edu.tr	
17	Website:	insaat.uludag.edu.tr	
18	Objective of the Course:	The aim of this course is to show how to apply soil mechanics theory to foundation design. In lectures, types of foundations are defined and two important criteria for foundation design such as settlement and bearing capacity calculations are introduced. Moreover, types of retaining walls and their design methods are determined.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	To be able to define type of field tests and their applications
		2	To be able to calculate immediate and consolidation settlements of cohesive and cohesionless soils
		3	To be able to calculate bearing capacity of cohesive and cohesionless soils
		4	To be able to learn shallow foundation types and how to design them
		5	To be able to learn retaining wall types and how to design them
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21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	
1	Introduction to the foundation design		

2	Geotechnical and Index properties: Laboratory testing, settlement and strength correlations	Theory, Problem Session		
3	Exploration, Sampling and in-situ soil measurements	Theory, Problem Session		
4	Bearing Capacity of Foundation: Capacity Equations and effect of water table	Theory, Problem Session		
5	Bearing Capacity of Foundation: Layered soils, Capacity from in-situ tests	Theory, Problem Session		
6	Foundation Settlement: Stress, Special loading cases	Theory, Problem Session		
7	Foundation Settlement: Immediate Settlement computations, rotation of bases	Theory, Problem Session		
8	Foundation Settlement: Elastic settlement, Consolidation settlements	Theory, Problem Session		
9	Shallow foundation design: Single footing, continues footing	Theory, Problem Session		
10	Mat Foundation Design	Theory, Problem Session		
11	Retainig Walls	Theory, Problem Session		
12	Retaining Walls	Theory, Problem Session		
13	Single Piles-Static Capacity and Lateral Loads	Theory, Problem Session		
14	Single Piles-Static Capacity and Lateral Loads	Theory, Problem Session		
Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical		14	3.00	42.00
Practicals/Labs		14	1.00	14.00
Self study and preperation		14	6.00	84.00
Homeworks		2	5.00	10.00
Projects		0	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exams		1	2.00	2.00
TERM LEARNING ACTIVITIES		NUMBE	WEIGHT	
Others		0	0.00	0.00
Midterm Exam		1	2.00	2.00
Final Exams		0	0.00	0.00
Total Work Load				154.00
Home work-project		2	10.00	
Total work load/ 30 hr		4	60.00	5.13
ECTS Credit of the Course				5.00
Total		4	100.00	
Contribution of Term (Year) Learning Activities to Success Grade		40.00		
Contribution of Final Exam to Success Grade		60.00		
Total		100.00		
Measurement and Evaluation Techniques Used in the Course				
24	ECTS / WORK LOAD TABLE			

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	4	4	3	3	4	3	0	0	3	0	0	0	0	0	0	0
ÖK2	5	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0
ÖK3	5	4	3	0	4	0	0	0	0	0	0	0	0	0	0	0
ÖK4	5	4	4	3	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	5	4	4	3	0	0	0	0	0	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	1 very low		2 low			3 Medium			4 High			5 Very High				