

CVE 366 Foundation Engineering Spring 2012

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Lecture Hours: Mondays 9:40 – 12:30 S-106

Office Hours: Mondays 14:00-17:00 R-219

Course website: <http://www.metu.edu.tr/~nejan/366/>

COURSE CONTENT

1. INTRODUCTION
2. STRESS DISTRIBUTION IN SOILS
3. SITE INVESTIGATION
Planning of borings, boring methods, sampling, in-situ (field) tests
4. SETTLEMENT OF STRUCTURES
Initial (elastic) settlement, consolidation settlement, allowable settlement
Settlements of footings on granular and cohesive soils
5. BEARING CAPACITY OF SOILS
Bearing capacity of cohesionless and cohesive soils, allowable bearing capacity of soils, use of field tests
6. DESIGN OF SHALLOW FOUNDATIONS
Types of shallow foundations, rigid design of shallow foundations on cohesionless and cohesive soils, use of in-situ tests in foundation design
7. RETAINING STRUCTURES, EXCAVATIONS
Review of earth pressure theory, earth retaining systems, cantilever and gravity retaining walls, anchored walls, reinforced earth walls, design of retaining structures
8. PILE FOUNDATIONS
Classification of piles, types of piles, bearing capacity of a single pile in cohesionless and cohesive soils, design of pile groups, settlement of pile groups

GRADING: 27% Midterm 1
27% Midterm 2
8% Homeworks
3% Attendance and Participation
35% Final

REFERENCE BOOKS

1. Lecture Notes
2. Soil Mechanics, R.F. Craig, 7th Edition,
3. Foundation Design and Construction, M.J. Tomlinson, 6th Ed. 1995
4. Foundation Engineering, I. Ordemir, METU Publications, 1984
5. Kazıklı Temeller, A. Birand, Teknik Yayınevi, 2001
6. Foundation Analysis and Design, J.E. Bowles, 1996

RECOMMENDED READINGS

For all the subjects, I recommend you to read your lecture notes first. For recommended readings from other references please see the page numbers given in the course website.

Week	Date	Subject
1	16 Feb	Introduction, Stress Distribution
2	20 Feb	Site Investigation
3	27 Feb	Site Investigation, Tutorial 1
4	5 March	Settlement
5	12 March	Settlement, Tutorial 2
6	19 March	Bearing Capacity
7	26 March	No class* (Conference in California)
8	2 April	Bearing Capacity, Tutorial 3
9	9 April	Shallow Foundations
10	16 April	Shallow Foundations, Tutorial 4
11	23 April	No class (National Holiday)
12	30 April	Retaining Structures
13	7 May	Retaining Structures
14	14 May	Tutorial 5A, 5B Pile Foundations
15	21 May	Pile Foundations Tutorial 6

* We will arrange extra classes for these.

MT1: Tentatively on 16 April

MT2: Tentatively on 14 May