CE 366 Foundation Engineering I
2013-14 Fall Semester

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Course website: http://www2.ce.metu.edu.tr/~ce366/

Lecture Hours:

Section 1: on Wednesdays 08:40 – 10:30 in TH-8
on Fridays 10:40 – 12:30 in TH-6

Section 2: on Wednesdays 08:40 – 10:30 in TH-7
on Fridays 10:40 – 12:30 in TH-7

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 (may be changed)

27% Midterm 1
27% Midterm 2
6% Pop-Quizzes
40% Final

REFERENCE BOOKS

1. Lecture Notes
2. Soil Mechanics, R.F. Craig, 7th Ed.,
3. Foundatiıon Design and Construction, M.J. Tomlinson
4. Foundation Engineering, I.Ordemir,
5. Pile Foundations, I. Ordemir,
6. Kazıklı Temeller, A. Birand, 2001
7. Foundation Design, D.P.Coduto, 2001
8. Principles of Foundation Engineering, B.M.Das, 1999

CE 366 Course Program

Week	*Wednesdays*	*Subject*	*Fridays*	*Subject*
1	25 Sept	Introduction	27 Sept	Stress Distribution
2	2 Oct	Site Investigation	4 Oct	Site Investigation
3	9 Oct	Site Investigation	11 Oct	Tutorial 1
4	**16 Oct**	**HOLIDAY**	**18 Oct**	**HOLIDAY**
5	23 Oct	Settlement	25 Oct	Settlement
6	30 Oct	Tutorial 2	1 Nov	Bearing Capacity
7	6 Nov	Bearing Capacity	8 Nov	Bearing Capacity
8	13 Nov	Tutorial 3a	15 Nov	Tutorial 3b
9	**20 Nov**	**Midterm 1**	22 Nov	Shallow Foundations
10	27 Nov	Shallow Foundations	29 Nov	Retaining Structures
11	4 Dec	Tutorial 4	6 Dec	Retaining Structures
12	11 Dec	Tutorial 5a	13 Dec	Retaining Structures
13	18 Dec	Tutorial 5b	20 Dec	Pile Foundations
14	25 Dec	Pile Foundations	27 Dec	Pile Foundations
15	**1 Jan**	**HOLIDAY**	3 Jan	Tutorial 6
16	8 Jan	Review	10 Jan	Review

*** Midterm 2 is on 19.12.2013 (Thursday) at 17:40.**

RECOMMENDED READINGS

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