



SCHOOL OF CIVIL ENGINEERING
INS332E
Introduction to Foundation Engineering
Spring 2009

Course Syllabus

Instructor:

Assoc. Prof. Dr. Derin Ural
Office : **Yapı Deprem Room 112**
Phone: **285-3742**
Course Hours: Mondays 09:30 – 12:30 Room B303
Assistant: Z. Nil Taylan

Attendance: Attendance will be taken in the lectures. At least 70% attendance and participation in class is required.

Grading Policy: The final course grade will be determined as follows:

Short Exams + Homework:	50%
Final Exam:	50%

Textbook: 1. *Principles of Foundation Engineering*, by Braja M. Das, 4th Edition, PWS-KENT Publishing Co., 1999.
2. *Principles of Geotechnical Engineering*, by Braja M. Das, 6th Edition, Thomson Publishing, 2007.

Homeworks:

- #1. In-Situ Soil Tests - Standard Penetration Test
Assignment Date: February 23, 2009
Deadline: March 9, 2009
- #2. Slope Stability Analysis
Assignment Date: March 9, 2009
Deadline: March 23, 2009
- #3. Slope Stability Analysis with GeoSlope
Assignment Date: March 30, 2009
Deadline: April 13, 2009
- #4. Sheet Pile Wall Design
Assignment Date: April 13, 2009
Deadline: April 27, 2009



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1. Introduction to Geotechnical Engineering (1 week)

2. Site Investigation and In-situ Soil Tests (2 weeks)

Soil borings; soil sampling; inspection pits; inspection boreholes. In-situ tests performed during boring tests; dynamic and static penetration tests; permeability tests; vane and pressuremeter tests.

*Reading Assignment: Textbook #2, pg.384-406
Textbook #1, pg.90-144*

3. Slope Stability (2 weeks)

Natural slope stability; slope failures; preventing landslides. Slope stability analysis methods.

Reading Assignment: Textbook #2, pg.309-355

4. Retaining Structures (2 weeks)

Earth pressure; gravity retaining structures; dimensioning and principles for calculations. Lateral earth pressure; sheet piles; dimensioning and principles for calculations.

Reading Assignment: Textbook #1, pg.334-386, 387-451, 453-519

5. Shallow Foundations (1 week)

Bearing capacity and settlement of shallow foundations; factors affecting the shallow foundations' bearing capacity; formulae for bearing capacity; allowable bearing capacity ;applications.

Reading Assignment: Textbook #1, pg.152-197, 219-268

6. Deep Foundations (2 weeks)

Designing deep foundations; pile types; pile design; caissons; footings. Bearing capacity of deep foundations; static pile bearing capacity formula, dynamic pile formula, pile load tests.

Reading Assignment: Textbook #1, pg. 564-643, 674-711, 715-718

7. Soil Improvement (2 weeks)

Soil improvement methods; compaction methods.

Reading Assignment: Textbook #1, 764-820