

CE 550 Foundation Engineering

Tentative for Fall 2016

Instructor: Tom Siller Department of Civil & Environmental
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Class Times: 8:00-8:50 M-W-F Required
Text: Principles of Foundation Engineering, B. Das, 8th Edition

Course Description: This course deals with the design of foundation structures to support structural loads for buildings, bridges, towers, etc. When discussing the design of foundation structures the emphasis will be placed on the type and size of the foundation and not on the actual structural design. The course will start off with a quick overview of soil mechanics principles, which provides the necessary foundation material for the remainder of the course. Then there will be two fairly distinct sessions to the course: First we will cover shallow foundations; then we will cover deep foundations.

Course Objectives By the end of this course you should have mastered the following skills:

- plan a site investigation program, including: types, number, and location of borings,
- the calculation of bearing capacity for both shallow and deep foundations,
- the calculation of predicted settlements for both shallow and deep foundations,
- design methods for shallow footings,
- design methods for mat foundations,
- design methods for deep foundations, and
- be able to choose an appropriate foundation method based on soil conditions and structural loads.

Prerequisites: It is expected you have passed a course in undergraduate soil mechanics.

Policies and Procedures:

Homework:

Homework assignments will be due at the beginning of class one week from the class during which the assignment is given, unless specified otherwise. Late homework will be reduced by 30% starting with the 1st day, and reduced by 10% for each week there after.

Cooperative effort is encouraged on homework, although it is important that each individual attempt to understand the assignments completely. When announced, group assignments will be accepted.

Exams:

There will be a mid-term exam and a final exam. The final exam will be cumulative, but will emphasize material not covered by the midterm.

Paper:

A paper will be required for this course. The topic will be the choice of each student, with the only requirement being that the topic must be related to the course objectives and be pre-approved by the instructor. *The paper will be due the last day of classes before the Thanksgiving break.*

Grading:

5%	Class Participation
25%	Homework
20%	Paper
20%	Mid-term Exam
30%	Final Exam.

The giving of Incompletes, I, will be accordance with University Policy which states that a written requirement will be sent to the student indicating the remaining work, and all incompletes not finished within 12 months will automatically be changed to an F. Therefore, I STRONGLY recommend that you do not request an incomplete.

Course Topics

TOPIC	Text Reading
Introduction	Chapter 1
Soil Mechanics Principles	Chapter 2
Site Exploration	Chapter 3
Shallow Foundations	Chapters 4-7
Mat Foundations	Chapter 8
Deep Foundations	Chapters 9-10
Special Conditions (time permitting)	Chapter 11