Instructor: T. Matthew Evans  
336 Owen Hall  
matt.evans@oregonstate.edu  
541.737.8535

Class Time and Location:  
MW 2:00-3:50  
Kearney 312

Office Hours: TR 2:00-4:00 or by appointment – or, just stop by for a chat (open door)

Notes About Office Hours: There may be occasions when I am unable to keep my posted office hours, but I will try to keep you as informed as possible. Please feel free to call (acceptable) or send email (preferable), especially if you think your question requires a brief answer.

Course Credits: This course combines approximately 90 hours of instruction, reading, and assignments for 3 credits (lecture/lab/recitation – 3/0/0).

Website: http://my.oregonstate.edu  
It is your responsibility to check for regular updates and announcements.

Prerequisites: Soil Mechanics (FE 316) or Geotechnical Engineering II (CE 373) is a prerequisite for this course. Completion of one of those courses presumes that you are also knowledgeable in calculus, geometry, physics, solid mechanics, and fluid mechanics and are able to apply that knowledge for the solution of soil mechanics and geotechnical engineering problems.


Objectives: The main objective of CE 471 is to introduce the geotechnical design of foundations to civil engineering students. This course will also serve to reinforce concepts from CE 372 (FE 315) and CE 373 (FE 316) by applying them to design problems. By the end of the quarter, you will be able to:

- Analyze in-situ test results and apply them to geotechnical design
- Design shallow foundations for required bearing capacity
- Calculate settlement of shallow foundations
- Compute axial capacity using load tests and analytic methods
- Evaluate lateral load capacity of piles and pile groups
- Select/design foundations appropriate for site conditions
- Use mathematical software (e.g., Mathcad, MATLAB, Excel) to perform calculations associated with geotechnical design
Grading:

- Class Participation .......................................................... 5%
- Problem Sets ..................................................................... 35%
- Midterm Exam ................................................................. 25%
- Final Exam ..................................................................... 35%

Grading System:

- 93-100 A
- 83-86.9 B
- 73-76.9 C
- 63-66.9 D
- 80-82.9 B
- 70-72.9 C
- 60-62.9 D
- 87-89.9 B+
- 77-79.9 C+
- 67-69.9 D+
- <60 F

NOTES:
1. These values are NOT rounded. For example, an 89.999 is a B+.
2. You must have an exam average ≥50 on in-class and final exams in order to receive a course grade other than F.

Problem Sets:

Take-home problem sets will be assigned periodically throughout the quarter. They will generally be due 1-2 weeks after they are assigned, depending on their complexity. Late problem sets will not be accepted without prior permission. You are strongly encouraged to use some form of mathematical software to do your assignments – Mathcad, MATLAB, Mathematica, Maple, and Excel (or other spreadsheet) are all acceptable. Problem sets completed in a clear, well-documented manner using mathematical software will be given a 10% bonus per assignment. Problem sets completed by hand must be presented on scaled engineering paper using only one side of each page.

You will complete problem sets in groups of three people. To receive full credit, the following general guidelines must be followed:
- You MUST use the cover page from the course web site on every submission. Only the people who contributed to the work should sign the cover sheet.
- Problem numbers, problem statements, and full solutions for each problem must be included.
- Solutions must be neat and orderly, all necessary sketches must be complete and all numerical results must have proper units.
- Multiple page submissions must be stapled.
- All papers must be flat and not folded.

Exams:

There will be one in-class exam during the course of the quarter and a comprehensive final exam. Exams will be closed-book, but you are allowed to bring in one 8.5” x 11” sheet of paper with formulae and other intellectual minutiae. The crib sheets will be handed in with the exams.

Make-up tests will not be given under any circumstances. If you are unable to attend the in-class exam, simply do not come. There is no need to apprise me of the situation either before or after the fact. The weight of any exam you miss will be rolled into the final exam.

Attendance:

Full participation in classes and examinations is expected. If you do not come to class, you will have unnecessary difficulty with the assignments and exams.
Additional Information: Accommodations are collaborative efforts between students, faculty, and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 737-4098. The DAS e-mail address is disability.services@oregonstate.edu.

Students shall adhere to the University policy on academic integrity found in the Student Conduct Code (OAR 576-015-0020(1)). By signing each written assignment and exam, the student attests to the following honor pledge: “I have neither given nor received unauthorized aid on this test or assignment.” Any actions against this honor pledge will be punished to the extent allowed by the University. Additional details are available online at the Statement of Expectations for Student Conduct.

Dead Week Note: There will be at least one assignment due during Dead Week, likely on the last day of classes. Please plan accordingly.
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<th>Reading*</th>
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<td>2 Soil Mechanics Review, Field Investigations</td>
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<td>3 <em>In-Situ</em> Testing</td>
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<td>4 Bearing Capacity of Shallow Foundations</td>
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<td><strong>10 MIDTERM EXAM</strong></td>
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<td>11 Deep Foundations: Overview</td>
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<td><strong>21 FINAL EXAM</strong></td>
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<td>TBD†</td>
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* The readings should be completed prior to attending the lecture. You are responsible for the material contained in the readings even though it may not all be covered in the lectures.
† The final exam calendar for Fall 2014 has not yet been released.