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Fall 2020

CE 642-851: Foundation Engineering

Matthew Riegel

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DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

CE 642 Foundation Design - Fall 2020

Instructor: **Matthew Riegel, P.E.**

e-mail: mdriegel@hntb.com

973-632-7541 (Cell)

Outside class hours please contact me via Moodle Forum or e-mail.

Text:

Foundation Design Principles and Practices 3rd ed; Coduto, Kitch, Yeung, Pearson, 2016. ISBN 0-13-341189-3

Fall 2020: Classes begin Wed 9-3 and ends Wed Dec 17

Week	Week of:	Topic/Assignment
1	Sep. 3	Course Introduction; Uncertainty and Risk in Foundation Design; Soil Mechanics Review. Read – Chapters 1 – 3 Assignment – Relevant examples to be posted under separate cover.
2	Sep. 10	Geotechnical Desk Studies, Subsurface Investigations and Site Characterization. <i>Quiz No - 1</i> Read Chapter 4 Assignment – Relevant examples to be posted under separate cover.
3	Sep. 17	Performance Requirements of Foundations <i>Quiz No – 2</i> Read Chapter 5 Assignment – Relevant examples to be posted under separate cover.
4	Sep. 24	Bearing Capacity of Shallow Foundations Read Chapters 6 and 7 Assignment – Relevant examples to be posted under separate cover.
5	Oct. 1	Settlement of Shallow Foundations <i>Quiz No – 3</i> Read Chapter 8 Assignment – Relevant examples to be posted under separate cover.
6	Oct. 8	Shallow Foundations Geotechnical and Structural Design Read Chapters 9, 10 and 11 Assignment – Relevant examples to be posted under separate cover.
7	Oct. 15	Introduction to Deep Foundations Quiz No – 4 Read Chapter 12 Assignment – Relevant examples to be posted under separate cover. Lectures 1 - 5
8	Oct. 22	Midterm Exam
9	Oct. 29	Pile Load Transfer, Limit States and Axial Load Testing Read Chapter 13 and 14 Assignment – Relevant examples to be posted under separate cover.
10	Nov. 5	Axial Capacity of Driven Piles – Static Analysis Read Chapter 15 Assignment – Relevant examples to be posted under separate cover.



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Week	Date	Topic/Assignment
11	Nov. 12	Axial Capacity of Drilled Shafts – Static Analysis <i>Quiz No 5</i> Read Chapter 16 Assignment – Relevant examples to be posted under separate cover.
12	Nov. 19	Pile Group Settlement and Structural Design Read Chapters 20 and 21 Assignment – Relevant examples to be posted under separate cover.
12	Nov. 26	Thursday Classes Meet
13	Dec. 3	Laterally Loaded Piles <i>Quiz No 6</i> Read Chapter 22 Assignment – Relevant examples to be posted under separate cover.
14	Dec. 10	Specialty Deep Foundations Read Chapter 17 and 18
15	Dec 17	Final Exam

Attendance and Participation: Given this is an internet-based course there are no true attendance requirements. I will maintain “class time” from 7pm to 10pm on the evening that the lectures are uploaded as noted on the schedule shown above. We will use this time to maintain an open forum where I will be available to answer questions and interact real-time. In addition I require that any academic questions be posted on a Moodle Forum associated with that lecture. Please allow 24 hours for me to respond if questions are posted during times other than “class time”, after which I suggest you reach out to me via e-mail or cell phone.

You will need a PDF scanner or a quality digital camera to upload your completed quizzes within the allotted time limit. All files MUST be submitted in PDF format.

The midterm and the final exams will be administered remotely; however, **the final will be administered at NJIT**. Students who reside outside commutable range of NJIT must secure an approved proctored to take their exam. Typically these locations may include a local college, university or library. I will work with you to come to an agreement as to an acceptable location; however, it should be noted these services are sometimes fee based and it is your responsibility to secure a location that meets the academic standards at NJIT to which I agree is acceptable.

Grading:

Your overall grade will be based on the following:

- 15% Quizzes
- 15% Homework Assignments
- 35% Midterm Grade
- 35% Final Grade



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September 1 Tuesday First Day of Classes
September 5 Saturday Classes Begin
September 7 Monday Labor Day
September 8 Tuesday Monday Classes Meet
September 8 Tuesday Last Day to Add/Drop a Class
September 8 Tuesday Last Day for 100% Refund, Full or Partial Withdrawal
September 9 Wednesday W Grades Posted for Course Withdrawals
September 14 Monday Last Day for 90% Refund, Full or Partial Withdrawal
September 28 Monday Last Day for 50% Refund, Full Withdrawal
October 19 Monday Last Day for 25% Refund, Full Withdrawal
November 9 Monday Last Day to Withdraw
November 25 Wednesday Friday Classes Meet
November 26 Thursday Thanksgiving Recess Begins
November 29 Sunday Thanksgiving Recess Ends
December 10 Thursday Last Day of Classes
December 11 Friday Reading Day 1
December 12 Saturday Saturday Classes Meet
December 13 Sunday Sunday Classes Meet
December 14 Monday Reading Day 2
December 15 Tuesday Final Exams Begin
December 21 Monday Final Exams End

Policy:

- **Electronic versions of homework must be a SCANNED PDF file with the file titled as follows:**
LAST NAME_Assignment No X.PDF
- Please keep a copy of all your work until you received a final grade.
- Please save a copy of your homework before submitting it to the instructor, since it may not be always possible for the instructor to return the corrected homework back in time for you to study for quizzes and examinations.
- All work should be done in a professional manner.
- Homework is due at the beginning of class. **Late homework will not be accepted.**
- The instructor may photocopy and save your assignments and tests, as part of the effort necessary to renew accreditation of our educational programs. The copies, which will be accessible only to faculty, administration, and external reviewers, will be destroyed afterwards.
- No make-up examination will be administered, unless approved by the Dean
- **Switch off cell phones during quizzes and examinations.**
- No recording devices shall be used during class or examinations. Take notes.

All examinations open book, open notes.

Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at:



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<http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu