

Department of Civil and Environmental Engineering

CE 3510: Soil Mechanics Fall 2019

Class Meeting time: MWF 11.15 – 12.05

Room: BOUS A106

| Instructor/ TA | Email | Office Hours | Location |
|---------------------|-----------------------------|--------------------------|----------|
| Maria Chrysochoou | Maria.chrysochoou@uconn.edu | M 2-4 | CAST 304 |
| Manish Roy | Manish.roy@uconn.edu | TBD | TBD |
| Sruthi Mantri (TA) | Sruthi.mantri@uconn.edu | Tu 130-3 Fr 2-330 | CAST 123 |
| Katherine Yale (TA) | Katherine.yale@uconn.edu | Tu 315-445 Th 315-445 | CAST 123 |

TEXTBOOK

Coduto, Yeung and Kitch, Geotechnical Engineering, Principles and Practices, Second Edition, Pearson.

SUPPLEMENTAL ONLINE MATERIAL

All lecture presentations are available on HuskyCT and uploaded BEFORE the lecture. Prof. Kitch's YouTube Channel includes lectures on several chapters, including 9, 10, 11 and 12 <https://www.youtube.com/channel/UCyt3w3SogxUSJ7RSxQusXXA>

CATALOG DESCRIPTION

Fundamentals of soil behavior and its use as a construction material. Effective stress principle, seepage and flow nets, consolidation, shear strength, limit equilibrium analysis.

PREREQUISITES

Prerequisite or co-requisite: CE 3110 Mechanics of Materials; enrollment in the School of Engineering.

COURSE OUTCOMES

Upon completing this class the student should be able to:

1. Describe and classify soil types and their properties.
2. Use the appropriate physical quantities and equations to compute relationships of the three subsurface phases (soil, water, air).
3. Perform compaction tests, analyze the results and design soil compaction processes.
4. Perform calculations to describe the movement of water through soil.
5. Calculate internal and external stresses applied to soil.
6. Perform settlement calculations due to consolidation.
7. Interpret the results of strength tests and predict failure conditions in soils.

ABET STUDENT OUTCOMES

Criterion 1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

Students will utilize principles of soil mechanics and mechanics of materials to solve problems related to soil behavior including permeability, compressibility and strength.

Criterion 2. An ability to apply the engineering design process to produce solutions that meet specified needs with consideration for public health and safety, and global, cultural, social, environmental, economic, and other factors as appropriate to the discipline

The students will design soil compaction processes, meeting technical specifications.

COURSE SCHEDULE

You will find a real-time schedule on a Google-Doc on Husky CT, which will be updated according to actual progress.

HOMEWORK

Homework will be assigned for each thematic unit (8 in total). Homework will be assigned and submitted ELECTRONICALLY through HuskyCT. Make sure to click on "Submit" after you have worked through all the problems.

A one-week period will be granted to submit homework – no exceptions to deadlines are granted. Additionally, the TA is not allowed to accept hand-written homework for evaluation; she will only assist with questions prior to the submission deadline. Homework solutions will be provided online after the submission deadline.

TERM PROJECT

Instructions for the term project will be provided separately on HuskyCT. The deadline for the term project is on final exam day.

Table: Grade calculation scheme

| GRADES | GRADE CONVERSION CHART | | |
|------------------|------------------------|--------------------|-------------------|
| Midterm I 25% | Letter Grade | Grade Point | Percentage |
| Midterm II 25% | A | 4.0 | 94 - 100% |
| Homework 10% | A- | 3.7 | 90 - 93% |
| Term Project 10% | B+ | 3.3 | 87 - 89% |
| Final exam 30% | B | 3.0 | 83 - 86% |
| | B- | 2.7 | 80 - 83% |
| | C+ | 2.3 | 77 - 79% |
| | C | 2.0 | 73 - 76% |
| | C- | 1.7 | 70 - 72% |
| | D+ | 1.3 | 67 - 79% |
| | D | 1.0 | 60 - 66% |
| | F | 0.0 | 0 - 59% |

CLASS POLICY

The lectures in this course build on the previous class's lecture; regular attendance is strongly recommended to understand the processes taught. The student is responsible for the material taught in a class not attended.

All class presentations are available on HuskyCT. Students are encouraged to bring the slides on their phone, table or computer to follow along with written notes on the board.

All exams are open-book. You can bring any material you think is useful (books, laptops, tablets).

The TA is NOT responsible for your grades; all complaints should be directed to the instructor.

PLAGIARISM

It is permissible, and encouraged, to work with classmates on problem assignments. As the saying goes, "two heads are better than one". The purpose of group collaboration is to bring together different viewpoints so a colleague may shed new light on a problem you are grappling with so you can think about it in a different way. You can then apply your altered viewpoint to solve the problem you were concerned with. The purpose of group collaboration is not to collectively put together one solution problem – that provides no benefit for the group members who must work independently to provide solutions to problems during class examinations. In fact, collective solutions violate the University of Connecticut code on plagiarism and require that actions be taken which may include dismissal from the university. More information about plagiarism can be found at:

http://www.irc.uconn.edu/PlagiarismModule/intro_m.htm

The University of Connecticut policy on Academic Misconduct is contained within the Student Code: http://www.dosa.uconn.edu/student_code.html

FINAL EXAM

Final exam week for Fall 2019 takes place from Monday, December 9, through Sunday, December 15. Students are required to be available for their exam during that time. Students must visit the Dean of Students Office if they cannot make their exam. The DOS will give the student his or her instructions thereafter.

Please note: vacations, previously purchased tickets or reservations, weddings (unless part of the wedding party), and other large or small scale social events, are not viable excuses for missing a final exam. Please contact the Dean of Students office with any questions. Thank you in advance for your cooperation.

POLICY AGAINST DISCRIMINATION, HARASSMENT, AND RELATED INTERPERSONAL VIOLENCE

The University is committed to maintaining an environment free of discrimination or discriminatory harassment directed toward any person or group within its community – students, employees, or visitors. Academic and professional excellence can flourish only when each

member of our community is assured an atmosphere of mutual respect. All members of the University community are responsible for the maintenance of an academic and work environment in which people are free to learn and work without fear of discrimination or discriminatory harassment. In addition, inappropriate amorous relationships can undermine the University's mission when those in positions of authority abuse or appear to abuse their authority. To that end, and in accordance with federal and state law, the University prohibits discrimination and discriminatory harassment, as well as inappropriate amorous relationships, and such behavior will be met with appropriate disciplinary action, up to and including dismissal from the University. Additionally, to protect the campus community, all non-confidential University employees (including faculty) are required to report sexual assaults, intimate partner violence, and/or stalking involving a student that they witness or are told about to the Office of Institutional Equity. The University takes all reports with the utmost seriousness. Please be aware that while the information you provide will remain private, it will not be confidential and will be shared with University officials who can help.