

## Syllabus -- Fall 2022

Excluding materials for purchase, syllabus information may be subject to change. The most up-to-date syllabus is located within the course in HuskyCT.

### Course and Instructor Information

**Course Title:** Soil Mechanics

**Credits:** 3

**Format:** In Person (classroom [GW 001](#))

**Class Meeting Time:** MoWeFr 11:15AM - 12:05PM

**Prerequisites:** CE 3110, which can be taken concurrently; enrollment in the School of Engineering.  
(Recommended preparation: CE 3120.)

**Professor:** Dr. Manish Roy

**Pronouns:** he/him/his

**Email:** [manish.roy@uconn.edu](mailto:manish.roy@uconn.edu)

**Student Hours/Availability**<sup>\*1,2</sup>: **Friday 3:30PM - 4:30PM** (in my office [EII 309](#))<sup>\*3</sup>  
**(Additional) Monday 6:00PM - 7:00PM** (in my virtual [WebEx room](#))<sup>\*3,4</sup>

<sup>\*1</sup> I welcome you to contact me through emails outside of student hours. I will try my best to respond within 24 hours Monday through Friday.

<sup>\*2</sup> If you want to give anonymous feedback, then please write it on a piece of paper and drop the paper into the feedback box affixed to the door of my office in [EII 309](#). Please make sure that there is no identifying information in that paper if you want to keep your feedback anonymous.

<sup>\*3</sup> I consider student hours to be an excellent opportunity to know my students. So, I welcome you to stop by with questions/feedback/concerns or just to say 'hi'. Please note that all student hours including that of TAs' are subject to change.

<sup>\*4</sup> I will hold an additional student hour outside the regular business hours in my [WebEx](#) room to accommodate those of you, who have conflicting schedule during the regular office hour. However, everyone is welcome.

**Graduate Teaching Assistant:** Quinn Packer

**Email:** [quinn.packer@uconn.edu](mailto:quinn.packer@uconn.edu)

**Student Hours:** **Monday 3:30PM - 4:30PM** (in-person; [CAST 205](#))  
**Wednesday 3:30PM - 4:30PM** (in-person; [CAST 205](#))

**Undergraduate Academic Assistant:** Amanda Wells

**Email:** [amanda.wells@uconn.edu](mailto:amanda.wells@uconn.edu)

**Student Hours:** **Tuesday 3:30PM - 4:30PM** (in-person; [CAST 205](#))  
**Thursday 3:30PM - 4:30PM** (in-person; [CAST 205](#))

### Course Materials

The **optional** textbook is available for purchase through the [UConn Bookstore](#) (or use the Purchase Textbooks tool in HuskyCT). Textbooks can be shipped ([fees apply](#)).

#### Required Materials:

Item 1. iClickers. Please register your iClicker account with the course site by **9/9/2022**. (Please check whether your

iClicker app/remote, as well as the iClicker account, is properly working without any technical issues.)

### **Optional Materials:**

Item 1. Textbook: Geotechnical Engineering: Principles & Practices, 2nd Edition, Pearson by Donald P. Coduto, Man-chu Ronald Yeung, and William A. Kitch.

Note: I will provide electronic copies of the study materials (class slides, web links, etc.). However, I still want to keep the textbook in the optional materials list because some students prefer to follow textbooks.

### **Supplemental Materials:**

Semi-complete lecture slides are uploaded to the course site on HuskyCT before each lecture. You are strongly encouraged to bring your copies of the slides (printed or on personal devices) to the class and take notes on them during the lecture. Some slides uploaded before the class are blank and are meant for in-class activities.

*Additional course readings and media are available within HuskyCT, through either an Internet link or Library Resources.*

## **Course Description**

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

## **Course Objectives**

By the end of the semester, students 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, and air).
3. Describe 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 to solve problems related to soil behavior including stresses, permeability, compressibility, and strength.

**Criterion 2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.**

Students will design soil compaction processes, meeting technical specifications.

## Course Requirements and Grading

### Summary of Course Grading:

Course Components	Weight
Homework	10%
Online Quizzes	10%
Term Project	15%
Mid-term I	20%
Mid-term II	20%
Mid-term III	20%
Class participation	5%
Final Exam (optional)* <sup>5</sup>	20%
Total	100%
Extra credits (INCLUDE Survey)	TBA

### Course Requirements:

#### Homework

- The course content is divided into **8 modules**. One homework will be assigned for each module.
- All homework will be assigned and submitted **electronically** through HuskyCT. **No paper/email submission will be accepted unless specifically approved by me.**
- The **lowest homework grade will be dropped** from the overall grade calculation.
- The deadline for submission of each homework is 11:59 PM on the day it is due unless otherwise specified in the course schedule.
- You are strongly encouraged to submit the homework by the deadline. However, I understand that unavoidable circumstances happen in our life. So, if you cannot submit a homework by the deadline for some reason, you may submit it within the next 24 hours with a late marking but no penalty. But, if you cannot submit it within the extended hours, then you may use the drop for such a case. **Some homework assignments may not have this flexibility.**
- Homework solutions will be uploaded to HuskyCT after the respective due dates are over.

#### Online Quizzes

- Each module will have one quiz administered via HuskyCT and graded automatically.
- No late quizzes will be accepted. However, the **lowest quiz grade will be dropped** from the overall grade calculation.

#### Term Project

- Term project will be done in groups. The groups will be formed using an NSF-funded project tool (CATME). Instructions for the term project will be provided separately on HuskyCT.

#### Mid-term exams

- Mid-term exams will be **open-book/open-notes**. No makeup exams will be offered. However, you will have the option to take the final exam to replace the lowest of the three mid-term grades.

#### \*<sup>5</sup>Final exams

- The **cumulative** final exam is **optional**. The higher of the “final exam grade” and the “lowest mid-term grade” will count toward the overall grade calculation.
- If you are willing to take the final exam, then you are required to be available for the final exam as scheduled by the Registrar’s office. If you want to take the final exam but cannot take it during the designated time slot, then you must contact the Dean of Students (DOS) Office well in advance. The DOS will give you further

instructions regarding the final exam schedule.

- The final exam will be **open-book/open-notes**.

### Class participation

- The **class participation** will be graded using **iClickers** or **other active learning activities** in the class.
- The grades will be based on actual participation and not on correctness of the answers.
- Your absence in a class will affect your grade due to lack of class participation on that day.
- If there are multiple activities in one class, only one activity will be counted toward participation for that day.

For additional information on undergraduate grading policies see here: <https://registrar.uconn.edu/grades/>.

### Grading Scale:

Grade	Letter Grade	GPA
93-100	A	4.0
90-92.9	A-	3.7
87-89.9	B+	3.3
83-86.9	B	3.0
80-82.9	B-	2.7
77-79.9	C+	2.3
73-76.9	C	2.0
70-72.9	C-	1.7
67-69.9	D+	1.3
63-66.9	D	1.0
60-62.9	D-	0.7
<60	F	0.0

### Class Policy

The lectures in this course build on the previous class' lecture. Hence you are strongly encouraged to attend the lecture regularly to understand the processes taught. Your grade will be influenced by your participation in the class.

Only important concepts from the before-class slides will be covered during the lecture. Students are required to read the entire slides or read/watch other supplementary materials uploaded to HuskyCT in order to complement the in-class lectures and come prepared to the problem-solving sessions.

### Due Dates and Late Policy

All course due dates are identified in the [course schedule](#) posted on HuskyCT. Deadlines are based on Eastern Time unless otherwise specified. ***The instructor reserves the right to change dates as the semester progresses. All changes will be communicated in an appropriate manner.***

The late policy for the individual course components is delineated under *Course Requirements* above.

### Feedback and Grades

I will make every effort to provide feedback and grades within 10 days from the due date or submission date, whichever is later. To keep track of your performance in the course, please refer to *My Grades* in HuskyCT.

### Weekly Time Commitment

You should expect to dedicate **9-12 hours** a week to this course. This expectation is based on the various course activities, assignments, and assessments, and the [University of Connecticut's policy regarding credit hours](#). (More information related to hours per week per credit can be accessed at the [Online Student website](#)).

## Course Outline

Module 0: Introduction  
Module 1: Phase Relations  
Module 2: Index Properties and Soil Classifications  
Module 3: Soil Compaction  
Module 4: Groundwater flow  
Module 5: Mohr Circle Analyses  
Module 6: Geostatic and Induced Stresses  
Module 7: Compressibility and Settlement  
Module 8: Soil Strength

## Course Schedule

A dynamic course schedule ([link](#)) is posted on HuskyCT. It is updated weekly to reflect the actual progress.

## How to Succeed in this Course

All students can succeed in this course and we are here to help you along the way. Please do not hesitate to ask questions or attend student hours. All questions are important here. Success in this course depends heavily on your personal health and well-being. Please recognize that stress is an expected part of the college experience, and it often can be compounded by unexpected setbacks or life changes outside the classroom. Your teaching assistants and I strongly encourage you to reframe challenges as an unavoidable pathway to success. Reflect on your role in taking care of yourself throughout the semester, before the demands of exams and projects reach their peak. Please feel free to reach out to me about any difficulty you may be having that may impact your performance in the course or campus life as soon as it occurs and before it becomes too overwhelming. In addition to your academic advisor, I strongly encourage you to contact the many other support services on campus that stand ready to assist you. Some of them are listed below:

[Academic Achievement Center](#),  
[Center for Students with Disabilities](#),  
[Dean of Students Office](#),  
[Quantitative Learning Center](#),  
[Student Health and Wellness -- Mental Health](#),  
[Title IX Office](#),  
[Writing Center](#).

## Study Groups

Are you interested in forming a study group with other students in the class? There is a study group application in Nexus that can help you get started. Please watch this [video](#) and click [here](#) for more information.

## Resources for Students Experiencing Distress

The University of Connecticut is committed to supporting students in their mental health, their psychological and social well-being, and their connection to their academic experience and overall wellness. The university believes that academic, personal, and professional development can flourish only when each member of our community is assured equitable access to mental health services. The university aims to make access to mental health attainable while fostering a community reflecting equity and diversity and understands that good mental health may lead to personal and professional growth, greater self-awareness, increased social engagement, enhanced academic success, and campus and community involvement.

Students who feel they may benefit from speaking with a mental health professional can find support and resources through the [Student Health and Wellness-Mental Health](#) (SHaW-MH) office. Through SHaW-MH, students can make

an appointment with a mental health professional and engage in confidential conversations or seek recommendations or referrals for any mental health or psychological concern.

Mental health services are included as part of the university's student health insurance plan and also partially funded through university fees. If you do not have UConn's student health insurance plan, most major insurance plans are also accepted. Students can visit the **Student Health and Wellness-Mental Health located in Storrs on the main campus in the Arjona Building, 4th Floor**, or contact the office at (860) 486-4705, or <https://studenthealth.uconn.edu/> for services or questions.

### **Accommodations for Illness or Extended Absences**

Please stay home if you are feeling ill and please go home if you are in class and start to feel ill. If illness prevents you from attending class, it is your responsibility to notify me as soon as possible. You do not need to disclose the nature of your illness, however, you will need to work with me to determine how you will complete coursework during your absence.

If life circumstances are affecting your ability to focus on courses and your UConn experience, you can email the Dean of Students at [dos@uconn.edu](mailto:dos@uconn.edu) to request support. Regional campus students should email the Student Services staff at their home campus to request support and faculty notification.

COVID-19 Specific Information: People with COVID-19 have had a wide range of symptoms reported – ranging from mild symptoms to severe illness. These symptoms may appear 2-14 days after exposure to the virus and can include:

- Fever,
- Cough,
- Shortness of breath or difficulty breathing
- Chills
- Repeated shaking with chills
- Muscle pain
- Headache
- Sore throat
- New loss of taste or smell

Additional information including what to do if you test positive or you are informed through contact tracing that you were in contact with someone who tested positive, and answers to other important questions can be found here: <https://studenthealth.uconn.edu/updates-events/coronavirus/>.

### **Mask and Social Distancing Expectations**

Refer to [UConn Campus Guidelines](#) for ongoing updates.

Please be respectful of the wishes of those who prefer to maintain social distancing. For their own protection, unvaccinated individuals are requested to maintain 6 feet social distancing from others.

### **Classroom Guidelines**

#### **Inclusive Classroom**

I will strive to create a safe and inclusive classroom environment such that students from all diverse backgrounds and perspectives (gender, sexuality, disability, age, socioeconomic status, ethnicity, race, national origin, language, and culture) can voice their opinions and that their opinions are heard. I am still learning about diversity. Please come and talk to me if something was said in class by anyone, which made you uncomfortable. You can also provide anonymous feedback by writing it on a piece of paper and dropping the same into the box affixed to my office door in [EII 309](#). If any of our class meetings or the mid-term exams conflict with your religious events or participation in extra-curricular activities at the request of, or coordinated by, a university official, please let me know so that I can make arrangements for you. You are encouraged to review the course schedule at the beginning of the semester for potential conflicts and promptly notify me of any anticipated accommodation needs. You are responsible for making arrangements in advance to make up missed work.

## Recording Lectures

Classes for this semester's course will be conducted in person. However, I may record these sessions using a suitable classroom technology. I will let the class know at the beginning of a session if I plan to record the session. The recording feature for others in attendance will be disabled so that no one else will be able to record the session. In order to protect student privacy and intellectual property rights, students are prohibited from recording any session, or any portion of a session, by other means. At my discretion and in accordance with university policies and guidelines, I may share one or more of the recorded sessions with the class to provide students with an additional opportunity to review course content. The sharing of any recorded content without my written permission is prohibited. For recordings conducted in person, please alert me to any concerns so that I may take steps to help ensure you are not recorded.

Please remember that the unauthorized recording or sharing of course content may be considered a violation of the law, University policy, and/or The Student Code.

Any instructor-created videos in this course are for sole use of the students enrolled in this course. Any other use of these videos or any pictures or derivatives of the videos without the written consent of the course's professor is prohibited.

The videos created by students or TAs as part of this course are for sole use of the students enrolled in this course. Any other use of these videos or any pictures or derivatives of the videos without the written consent of the video creator is prohibited.

**Statement on Copyright:** My lectures, notes, handouts, and displays are protected by state common law and federal copyright law. They are my own original expression and I've recorded them prior or during my lecture in order to ensure that I obtain copyright protection. Students are authorized to take notes in my class; however, this authorization extends only to making one set of notes for your own personal use and no other use. Students may not provide copies of any material in any form to anyone else, or make a commercial use of them without prior permission from me. Students are prohibited from recording my lectures in any session, or any portion of a session, by any means.

## Student Responsibilities and Resources

As a member of the University of Connecticut student community, you are held to certain standards and academic policies. In addition, there are numerous resources available to help you succeed in your academic work. Review these important [standards, policies and resources](#), which include:

- The Student Code
  - Academic Integrity
  - Resources on Avoiding Cheating and Plagiarism
- Copyrighted Materials
- Credit Hours and Workload
- Netiquette and Communication
- Adding or Dropping a Course
- Academic Calendar
- Policy Against Discrimination, Harassment and Inappropriate Romantic Relationships
- Sexual Assault Reporting Policy

## Students with Disabilities

The University of Connecticut is committed to protecting the rights of individuals with disabilities and assuring that the learning environment is accessible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, please let me know immediately so that we can discuss options. Students who require accommodations should contact the Center for Students with Disabilities, Wilbur Cross Building Room 204, (860) 486-2020 or <http://csd.uconn.edu/>.

## Software/Technical Requirements (with Accessibility and Privacy Information)

The software/technical requirements for this course include:

- Equipment Recommendations (<https://remotework.uconn.edu/equipment-recommendations/>)
- HuskyCT/Blackboard ([HuskyCT/ Blackboard Accessibility Statement](#), [HuskyCT/ Blackboard Privacy Policy](#))
- [Adobe Acrobat Reader](#) ([Adobe Reader Accessibility Statement](#), [Adobe Reader Privacy Policy](#))
- Google Apps ([Google Apps Accessibility](#), [Google for Education Privacy Policy](#))

- Microsoft Office (free to UConn students through [uconn.onthehub.com](http://uconn.onthehub.com)) ([Microsoft Accessibility Statement](#), [Microsoft Privacy Statement](#))
- Dedicated access to high-speed internet with a minimum speed of 1.5 Mbps (4 Mbps or higher is recommended).

**Privacy Statement:** For information on managing your privacy at the University of Connecticut, visit the [University's Privacy page](#). NOTE: This course has NOT been designed for use with mobile devices.

## Help

[Technical and Academic Help](#) provides a guide to technical and academic assistance.

This course uses the learning management platform, [HuskyCT](#). If you have difficulty accessing HuskyCT, you have access to the in-person/live person support options available during regular business hours through the [Help Center](#). You also have [24x7 Course Support](#) including access to live chat, phone, and support documents.

## Student Technology Training

Student technology training is now available in a new HuskyCT short course created by students for students. It will prepare you to use the IT systems and services that you will use throughout your time at UConn, whether learning online or on-campus. It is available at [https://lms.uconn.edu/ultra/courses/\\_80016\\_1/cl/outline](https://lms.uconn.edu/ultra/courses/_80016_1/cl/outline).

## Minimum Technical Skills

To be successful in this course, you will need the following technical skills:

- Use electronic mail with attachments.
- Save files in commonly used word processing program formats.
- Copy and paste text, graphics or hyperlinks.
- Work within two or more browser windows simultaneously.
- Open and access PDF files.
- Work with Microsoft Word, Excel, and PowerPoint.
- Work with Google Docs, Sheets, and Slides.

## Evaluation of Course Experience

Students will be given an opportunity to provide feedback on their course experience and instruction using the University's standard procedures, which are administered by the [Office of Institutional Research and Effectiveness \(OIRE\)](#).

The University of Connecticut is dedicated to supporting and enhancing teaching effectiveness and student learning using a variety of methods. The Student Evaluation of Teaching (SET) is just one tool used to help faculty enhance their teaching. The SET is used for both formative (self-improvement) and summative (evaluation) purposes.

Additional informal formative surveys and other feedback instruments may be administered within the course.