

**Soil Mechanics**  
**CEG 4011 All Sections**  
**Class Periods: M, W, F, 6<sup>th</sup> period, 12:50 – 1:40 pm**  
**Location: FLG 245**  
**Academic Term: Fall 2025**

***Instructor:***

Dr. Ana Mohseni

[amohseni@ufl.edu](mailto:amohseni@ufl.edu)

352-294-7766

Office Hours (Weil 265 G):

- During lab weeks: Fridays, 4:00 – 4:50 pm
- Weeks without lab: Fridays, 2:00 – 2:50 pm

***Undergraduate Scholars:***

Homework grading (Weil 256):

- David Dalia, [daviddalia@ufl.edu](mailto:daviddalia@ufl.edu), Friday 10:40 – 11:30 am
- Kaytlyn Paul, [k.paul@ufl.edu](mailto:k.paul@ufl.edu), Monday 1:55 – 2:45 pm
- Andrew Witter, [andrewwitter@ufl.edu](mailto:andrewwitter@ufl.edu), Wednesday 3:00 - 3:50 pm

Laboratory grading (Weil 256):

- Robbie Sternberg, email: [sternberg.robby@ufl.edu](mailto:sternberg.robby@ufl.edu), Tuesday 10:40 – 11:30 am
- Maria Rabant, email: [rabantmaria@ufl.edu](mailto:rabantmaria@ufl.edu), Tuesday 12:50 - 1:40 pm
- Ben Deakin, email: [bdeakin@ufl.edu](mailto:bdeakin@ufl.edu), Thursday 11:45 - 12:35 pm

***Course Description***

Physical properties of soils, compaction, the flow of water through soil, the distribution of stress within the soil, and consolidation. Laboratory required.

***Course Pre-Requisites / Co-Requisites***

EGM 3520

***Course Objectives***

This course requires the student to apply basic math, science and engineering principles to solve engineering problems. The weekly laboratory sections require the ability to conduct experiments and analyze and interpret data. Working in groups fosters the ability to function efficiently as a team. The written laboratory reports represent forms of technical communication. Homework and the four Tests require the ability to identify, formulate and solve engineering problems.

The student is expected to learn:

- The basics of physical geology – the rock cycle, plate tectonics, origin, transportation and deposition of soils, etc.
- The definitions of Soil Mechanics and the use of phase diagrams
- To classify soils by the USCS and AASHTO systems
- To calculate geostatic stresses
- To estimate stress distribution in soil
- To make calculations on the 1-D and 2-D flow of water through soils
- To calculate the consolidation settlement of structures on clay
- The fundamentals of soil shear strength
- The procedures for performing standard soil laboratory tests

***Materials and Supply Fees***

N/A

**Relation to Program Outcomes (ABET):**

The table below is an example. Please consult with your department's ABET coordinator when filling this out.

Outcome	Coverage*
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	High
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	
3. An ability to communicate effectively with a range of audiences	High
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	Medium
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	High

\*Coverage is given as high, medium, or low. An empty box indicates that this outcome is not covered or assessed in the course.

**Required Textbooks and Software**

- There is no required textbook for this course. Handouts for some lectures will be provided in PDF format and posted on Canvas. Be sure to look over these and bring them to class so you can follow along. Lecture notes are the student's responsibility.

**Recommended Materials**

- Geotechnical Engineering: Principles and Practice by Donald P. Conduto
- Fundamentals of Ground Engineering by John Atkinson
- Principles of Geotechnical Engineering by Braja M. Das, any edition
- Fundamentals of Geotechnical Engineering by Braja M. Das, any edition
- Soil Mechanics in Engineering Practice by Terzaghi, Peck and Mesri
- Soil Mechanics by Lambe & Whitman

These books are good references, especially for students who would like to practice more problems than the ones solved in class and on homework. The library also has many other soil mechanics and geotechnical engineering books. Many different resources can be found online.

**Attendance Policy, Class Expectations, and Make-Up Policy**

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1. **Attendance: Not required**
2. **Laboratory:** Attendance lab is mandatory. Lab reports are due at the beginning of the next lab meeting unless otherwise instructed. Pre-labs will be due at the beginning of the lab to be conducted.
  - **Lab reports and pre-labs will be considered late 10 minutes after the start of the lab (2:05 PM);** they will not be accepted after the lab is finished. **ALL lab reports must be submitted to receive credit for the course. Late labs will be accepted within 24h for a 10% penalty. After that, students are still required to turn the lab report whiting a week in to receive credit for the course. A missing lab report means a failing grade in the course.**
  - **PPE:** Pants and closed-toed shoes are required for lab attendance. If a student does not have proper attire, then the student will receive a 10% deduction on their lab report and will have to leave and make up the lab during a different section. There are NO exceptions to this policy.
  - **Lab absence:** If a student has a valid excuse for missing a lab then prior notice and approval must be granted.
3. **Assignments:** Homework will be assigned approximately weekly, and it is due at **11:59 PM** on the day specified. **All homework submissions must be done online in Canvas. Late homework will be accepted if submitted within 24h of the original due date for a 10% penalty. After that, no late HW will be accepted!** These rules apply unless advance written notice has been submitted to the instructor for a valid excuse. All homework must follow the format below. Illegible homework is subject to being rejected by the TAs for grading purposes.
4. **Homework Submission Instructions:**
  - All homework must be submitted on canvas using **engineering computation paper. If you are solving directly on a computer or tablet, an engineering paper is not necessary.**
  - Work should be organized and neat. Assumptions should be clearly stated, appropriate units should be noted on answers, and answers should be boxed, underlined, or otherwise appropriately labeled. If your answer is not clear, you will not receive credit.
  - Enough space should be provided between problems to identify each one.
  - Numerical answers should be given with an appropriate number of significant digits.
  - Illegible homework is subject to being rejected by the TAs for grading purposes.
5. **Tests:** Each test will concentrate on the material most **recently covered, and they will be handled during the evening with 100 minutes in a designated classroom**—no open notes during the tests. You will receive a formula sheet during the test, which must be returned at the end of the test. Please do not write on the formula sheet.
  - **Make-up Test/Late Assignment Policy:** Do not miss a test unless you have a valid excuse. Make-up tests will only be rescheduled if prior approval is granted, and the student must make a reasonable attempt to take the test before the scheduled test date. Tests can be reviewed at any time in the T.A.'s office, but will not be returned to keep. **To receive any points back, you must talk with the T.A. within the first week after grades are published.**
  - **The instructor and assistants will discuss any test, homework, or lab report within 1 week (excluding holidays) after the grades are posted. After this, the discussion is closed, and grades are final.**
  - **Calculator Policy for Tests:** The only calculators that are allowed for use during the tests are the ones that are permitted for the Fundamentals of Engineering Test, which all civil engineering students are required to take before graduation. **There are NO exceptions to this policy.**

### *Evaluation of Grades*

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Assignment	Total Points	Percentage of Final Grade
Homework Sets (10)	100 each	10%
Lab reports (10)	100 each	20%
Tests (5)	100 each	70%
Total		100%

### ***Grading Policy***

Percent	Grade	Grade Points
93.5 - 100	A	4.00
90.0 - 93.49	A-	3.67
87.0 - 89.99	B+	3.33
83.5 - 86.99	B	3.00
80.0 - 83.49	B-	2.67
77.0 - 79.99	C+	2.33
73.5 - 76.99	C	2.00
70.0 - 73.49	C-	1.67
67.0 - 69.99	D+	1.33
63.5 - 66.99	D	1.00
60.0 - 63.49	D-	0.67
0 - 59.99	E	0.00

More information on UF grading policy may be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

**The minimum grade to pass this course is a C!**

### ***Students Requiring Accommodations***

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

### ***Course Evaluation***

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

### ***In-Class Recording***

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history,

academic exercises involving solely student participation, assessments (quizzes, tests, Tests), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

### ***University Honesty Policy***

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

### ***Commitment to a Safe and Inclusive Learning Environment***

The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

- Your academic advisor or Graduate Program Coordinator
- Robin Bielling, Director of Human Resources, 352-392-0903, [rbielling@eng.ufl.edu](mailto:rbielling@eng.ufl.edu)
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, [taylor@eng.ufl.edu](mailto:taylor@eng.ufl.edu)
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, [nishida@eng.ufl.edu](mailto:nishida@eng.ufl.edu)

### ***Software Use***

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

### ***Student Privacy***

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <https://registrar.ufl.edu/ferpa.html>

### ***Campus Resources:***

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### Health and Wellness

#### **U Matter, We Care:**

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

**Counseling and Wellness Center:** <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

#### **Sexual Discrimination, Harassment, Assault, or Violence**

If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the [Office of Title IX Compliance](mailto:title-ix@ufl.edu), located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, [title-ix@ufl.edu](mailto:title-ix@ufl.edu)

#### **Sexual Assault Recovery Services (SARS)**

Student Health Care Center, 392-1161.

**University Police Department** at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.

### Academic Resources

**E-learning technical support**, 352-392-4357 (select option 2) or e-mail to [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu).  
<https://lss.at.ufl.edu/help.shtml>.

**Career Resource Center**, Reitz Union, 392-1601. Career assistance and counseling. <https://www.crc.ufl.edu/>.

**Library Support**, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

**Teaching Center**, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.  
<https://teachingcenter.ufl.edu/>.

**Writing Studio**, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.  
<https://writing.ufl.edu/writing-studio/>.

**Student Complaints Campus:** <https://care.dso.ufl.edu>.

**On-Line Students Complaints:** <http://www.distance.ufl.edu/student-complaint-process>.

### Tentative Course Outline:

Lecture #	Week day	Month	Day	Description	HW	Lab
-	F	Aug	22	Introduction		No Lab
1	M	Aug	25	Geology of Soils, Grain size, Shape, Angularity		No Lab
2	W	Aug	27	Phase Diagrams		
2	F	Aug	29	Phase Diagrams	<b>HW-1</b>	
-	M	Sep	01	--Labor Day-- --No Class--		No Lab
2	W	Sep	03	Phase Diagrams		
3	F	Sep	05	Atterberg Limits	<b>HW-1 due date</b>	
4	M	Sep	08	Soil Classification		Lab 1
4	W	Sep	10	Soil Classification	<b>HW-2</b>	
4	F	Sep	12	Soil Classification <b>*END OF TEST 1 TOPICS*</b>		
5	M	Sep	15	Compaction	<b>HW-2 due date</b>	Lab 2 Lab 1 due
6	W	Sep	17	Geostatic Stresses		
-	R	Sep	18	<b>Test 1 from 8:20 to 10:00 PM</b>		
-	F	Sep	19	<b>No class</b>		
6	M	Sep	22	Geostatic Stresses	<b>HW-3</b>	Lab 3 Lab 2 due
6	W	Sep	24	Geostatic Stresses		
7	F	Sep	26	Stresses Due Surface Loads	<b>HW-3 due date</b>	
7	M	Sep	29	Stresses Due Surface Loads	<b>HW-4</b>	Lab 4 Lab 3 due
7	W	Oct	01	Stresses Due Surface Loads <b>*END OF TEST 2 TOPICS*</b>		
8	F	Oct	03	Permeability	<b>HW-4 due date</b>	
9	M	Oct	06	1D Flow		Lab 5 Lab 4 due
9	W	Oct	08	1D Flow	<b>HW-5</b>	
-	R	Oct	09	<b>Test 2 from 8:20 to 10:00 PM</b>		
-	F	Oct	10	<b>No class</b>		



9	M	Oct	13	1D Flow		No Lab
10	W	Oct	15	2D Flow	<b>HW-5 due date</b>	
-	F	Oct	17	Homecoming -- No Class --		
10	M	Oct	20	2D Flow	<b>HW-6</b>	Lab 6 Lab 5 due
10	W	Oct	22	2D Flow <b>END OF TEST 3 TOPICS*</b>		
11	F	Oct	24	Mohr circle	<b>HW-6 due date</b>	
11	M	Oct	27	Mohr circle	<b>HW-7</b>	Lab 7 Lab 6 due
12	W	Oct	29	Shear strength		
-	R	Oct	30	<b>Test 3 from 8:20 to 10:00 PM</b>		
-	F	Oct	31	No class		
12	M	Nov	03	Shear strength	<b>HW-7 due date / HW-8</b>	Lab 8 Lab 7 due
12	W	Nov	05	Shear strength <b>END OF TEST 4 TOPICS*</b>		
13	F	Nov	07	Consolidation Settlement	<b>HW-8 due date</b>	
14	M	Nov	10	Consolidation of clays	<b>HW-9</b>	Lab 9 Part 1 Lab 8 due
14	W	Nov	12	Consolidation of clays		
-	R	Nov	06	<b>Test 4 from 8:20 to 10:00 PM</b>		
15	F	Nov	14	Secondary compression and time rate consolidation	<b>HW-9 due date / HW-10</b>	
15	M	Nov	17	Secondary compression and time rate consolidation		Lab 9 Part 2 No Lab
16	W	Nov	19	Geotechnical investigation	<b>HW-10 due date</b>	
16	F	Nov	21	Geotechnical investigation <b>*END OF TEST 5 TOPICS*</b>		
-	M	Nov	24	Thanksgiving – no class		No Lab
-	W	Nov	26	Thanksgiving – no class		
-	F	Nov	28	Thanksgiving – no class		
-	M	Dec	01	No class		No Lab Lab 9 and 10 due
-	T	Dec	02	<b>Test 5 from 8:20 to 10:00 PM</b>		
-	W	Dec	03	No class Lab reports are due at the TA's office between 12:50 – 1 PM		