

Course Syllabus – CNST 3372 Strength of Construction Materials

Course Description:

The course gives an overview of the difference and correlation between soil mechanics and foundations engineering. **Soil mechanics** is the branch of engineering that involves the study of the properties of soils and their behaviors under stress and strain in idealized conditions. **Foundation engineering** is the application of the principles of soil mechanics in the planning, design and construction of foundations for buildings, highways, dams and so forth. This course presents a detailed look into soil properties and foundations design.

Course Prerequisites:

C or better in CNST 3355 Strength of Construction Materials

Textbook:

Cheng Liu & Jack B. Evett (2008), Soils & Foundations, 8th Edition

Course Learning Outcomes:

Upon the completion of the course students will demonstrate the ability to:

1. Understand terminology and units of measurements related to soil explorations;
2. Understand ASTM test methods;
3. Understand terminology related to shallow and deep foundations for buildings and shoring;
4. Understand soil characterization.
5. Understand soil compaction, lateral earth pressure, and soil bearing capacity.
6. Understand how to read a soil boring log and understand a geotechnical report.
7. Analyze professional decisions based on ethical principles

In addition to the learning objectives above, this course emphasizes Ethics, and Safety.

Student Learning Outcomes:

6. Analyze professional decisions based on ethical principles
19. Understand the basic principles of structural behavior

Course and Student Learning Outcome Mapping:

Student Learning Outcome	Course Learning Outcomes
6	7
19	1,2,3,4,5,6

Student Learning Assessment and Assessment Target:

Assessment	SLO#6	SLO#19	Assessment Target
Assess (A)	X	X	At least 70% of students receive a grade of 70 or better

Class Grading:

Assignments	15%
Class Quizzes	20%
Midterm Exam	30%
Final Exam	35%

Grading Scale:

Letter Grade	Score
A	90% - 100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	< 60%

Note: During the semester, students are responsible for verification of correct score for their assignments, quizzes, and midterm exams. No corrections/modifications will take place after the last class.

Class Schedule:

Number	Topics
1	Introduction to Soil Types
2	Engineering Properties of soils
3	Soil Exploration
4	Soil Compaction and Stabilization
5	Water in Soil
6	Stress Distribution in Soil
7	Consolidation of Soil & Settlement
8	Shear Strength of Soil
9	Shallow Foundations
10	Deep Foundations
11	Lateral Earth Pressure

Academic Honesty:

The instructor reserves the right to adjust letter grades, upward only, based on individual attendance and class participation if numerical grade warrants such consideration. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from The University. Since dishonesty harms the individual, all students, and the integrity of The University, policies on scholastic dishonesty will be strictly enforced.

Students with Disabilities:

University of Houston provides, upon request, appropriate academic adjustments for qualified students with disabilities. Any student with a documented disability (physical or cognitive) who requires academic accommodations should contact the Center for Students with Disabilities (713/743-5400) for more assistance.

Exam and Homework Policy:

Eleven separate topics in soil mechanics and foundation engineering will be provided. Each topic may require more than one lecture period. The lectures will be given on the Teams platform. Following the completion of the last lecture on a specific topic, there will be a Post-Lecture Exam to test the level of understanding for the topic. You have one week to complete the exam. There will be no make ups and no credit for exams that are not completed by the due date. Exams and Power Point lecture material will be given thru Black Board and your exam

answers will be recorded on Black Board.

Classroom Behaviors:

High level of professionalism in the classroom is expected. The instructor has the right to set the rules in his/her classroom. A student does not have the right to make changes to the instructor's way of managing the classroom. Disruptive behaviors, such as excessive talking, arriving late to class, and using unauthorized electronic devices during class is not permitted. Repetitive and seriously disruptive behavior may result in removal from class in accordance with policies and procedures set by the Dean of Students Office.

University Counseling and Psychological Services:

Counseling and Psychological Services (CAPS) can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach CAPS (UH main campus www.uh.edu/caps, or UH Sugar Land campus <http://www.uh.edu/dsaes/uhsugarland/>) by calling [713-743-5454](tel:713-743-5454) during and after business hours for routine appointments or if you or someone you know is in crisis. No appointment is necessary for the "Let's Talk" program, a drop-in consultation service at convenient locations and hours around campus.

UH main campus: http://www.uh.edu/caps/outreach/lets_talk.html

UH Sugar Land campus: <http://www.uh.edu/dsaes/uhsugarland/>

Course/Instructor Evaluation:

A Start -Stop-Continue survey and a course/instructor evaluation will be conducted at the middle and the end of this semester. Any suggestions you have on improving the course, however, are welcome throughout the semester.

For detailed information about Disabilities, Religious Holy Days, the Academic Calendar, and Academic Honesty, and other information, please visit the following website:

http://www.uh.edu/provost/stu/stu_syllabsuppl.html

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<http://www.uh.edu/provost/policies/student/resources/>.

Resources for Online Learning:

The University of Houston is committed to student success, and provides information to optimize the online learning experience through our [Power-On](#) website. Please visit this website for a comprehensive set of resources, tools, and tips including: obtaining access to the internet, AccessUH, and Blackboard; requesting a laptop through the Laptop Loaner Program; using your smartphone as a webcam; and downloading Microsoft Office 365 at no cost. For questions or assistance contact UHOnline@uh.edu.

UH Email

Email communications related to this course will be sent to your [Exchange email account](#) which each University of Houston student receives. The Exchange mail server can be accessed via Outlook, which provides a single location for organizing and managing day-to-day information, from email and calendars to contacts and task lists. Exchange email accounts can be accessed by logging into

Office 365 with your CougarNet credentials or through Access UH. They can also be configured on [iOS](#) and [Android](#) mobile devices. Additional assistance can be found at the [Get Help](#) page.

Webcams

Access to a webcam is required for students participating remotely in this course. Webcams must be turned on (*state when webcams are required to be on and the academic basis for requiring them to be on*). (Example: *Webcams must be turned on during exams to ensure the academic integrity of exam administration.*)

Honor Code Statement

Students may be asked to sign an honor code statement as part of their submission of any graded work including but not limited to projects, quizzes, and exams: *"I understand and agree to abide by the provisions in the (select: [University of Houston Undergraduate Academic Honesty Policy](#), [University of Houston Graduate Academic Honesty Policy](#)). I understand that academic honesty is taken very seriously and, in the cases of violations, penalties may include suspension or expulsion from the University of Houston."*

Course Delivery Formats and Final Exams

HyFlex Courses: This course is a HyFlex course. Some students may have a designated face-to-face spot reserved, but alternative ways to participate will also be provided. These alternatives may include (but are not limited to) attending class sessions through synchronous streaming, viewing recordings of class meetings asynchronously, participating in discussion boards, and/or completing self-directed activities. This course will have a final exam per the [University schedule](#). As the University will be transitioning all classes and final exams given after the Thanksgiving Break to online delivery, the exam for this course will be delivered in the synchronous online format, and the specified date and time will be announced during the course. Prior to the exam, descriptive information, such as the number and types of exam questions, resources and collaborations that are allowed and disallowed in the process of completing the exam, and procedures to follow if connectivity or other resource obstacles are encountered during the exam period, may be provided.

Synchronous Online Courses: This course is being offered in the Synchronous Online format. Synchronous online class meetings will take place according to the class schedule. There is no face-to-face component to this course. In between synchronous class meetings, there may also be asynchronous activities to complete (e.g., discussion forums and assignments). This course will have a final exam per the [University schedule](#). The exam will be delivered in the synchronous online format, and the specified date and time will be announced during the course. Prior to the exam, descriptive information, such as the number and types of exam questions, resources and collaborations that are allowed and disallowed in the process of completing the exam, and procedures to follow if connectivity or other resource obstacles are encountered during the exam period, may be provided.

Asynchronous Online Courses (or asynchronous exam in another course format): This course is taught Asynchronously, which means there is no designated day or time assigned to the course (although optional synchronous sessions are possible, such as virtual office hours or discussion groups). Asynchronous instruction generally involves accessing content, such as recorded video lectures, readings, discussion prompts, assignments, and assessments during a flexible time frame, with due dates as specified. This course will have a final exam at the course conclusion. The exam will be asynchronous, and the date and time that it will be released and due will be announced during the course. Prior to the exam, descriptive information, such as the number and types of exam

questions, resources and collaborations that are allowed and disallowed in the process of completing the exam, and procedures to follow if connectivity or other resource obstacles are encountered during the exam period, may be provided.

Alternative Assessment in Any Course Format: An alternative assessment will be used in the place of the traditional final exam at the course conclusion. Instructions will be provided, including the date and time that the assessment materials will be released to the class and will be due, resources and collaborations that are allowed and disallowed in the process of completing the assessment, procedures to follow if connectivity or other resource obstacles are encountered during the assessment period, acceptable submission formats, and submission location.

Helpful Information

COVID-19 Updates: <https://uh.edu/covid-19/>

Coogs Care: <https://www.uh.edu/dsaes/coogscare/>

Laptop Checkout Requests: <https://www.uh.edu/infotech/about/planning/off-campus/index.php#do-you-need-a-laptop>

Health FAQs: <https://uh.edu/covid-19/faq/health-wellness-prevention-faqs/>

Student Health Center: <https://uh.edu/class/english/lcc/current-students/student-health-center/index.php>

