

# Three Rivers Community College

## Capstone Soils – Syllabus

### CIV K200 Spring 2014

Instructor; Donald W. Gerwick, P.E., L.S., C.F.M.  
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Office D 205 W; Office Hours: M & W 3:30 – 5:00;  
Additional Days and Times by Appointment

Class Location – B 107;

Times: Tuesday (Lecture) 2:30 pm – 3:45; Thursday 2:30 pm – 3:45; (Lab) 3:46 p.m. - 5:25 p.m.

Text: **Soils and Foundations**, 8th edition; Cheng, Liu & Evett, Jack B.

Additional Required Materials (available in PDF format online):

2002 Connecticut Guidelines for Erosion and Sedimentation Control

2011 Connecticut Department of Health Technical Standards for On-Site sewage design.

CT Dept. of Public Health Design Manual Subsurface Sewage Disposal Systems For Households and Small Commercial Buildings (1998)

A Calculator with Trigonometric functions is required.

**Course Outcomes** – Students who successfully complete the course shall have a good understanding of the physical properties of soil as well as their behavior with respect to loads, shear and consolidation. Students will also gain a fundamental understanding of the movement of water through soils. Students will also complete a “capstone” project and portfolio that utilize all or many of the skills that they have acquired from their Civil or Environmental programs.

Chap. 1 - Formation of Natural Deposits – All Sections

Homework (HW); Students will prepare a two page report identifying the major parent materials of southeastern Connecticut and the major types of soil formations of the area. Use a minimum of three notated sources.

Chap. 2 - Engineering Properties of Soil – All Sections

HW: Set #1; 2.1, 2.3, 2.5, 2.8, 2.11  
Set #2: 2.13, 2.17, 2.18, 2.20

**Quiz 1** – Chapters 1 & 2 and all lecture material.

Chap. 3 – Soil Exploration – All Sections

HW 3.1, 3.3, 3.5, Discuss some of the advantages of reconnaissance and the advantages and disadvantages of the open pit method.

Introduction to 2002 Connecticut Guidelines for Erosion and Sedimentation Control  
(available as a free PDF download from CT DEEP website).

E&S Guidelines Chap. 2; All sections

HW Problem(s) to be assigned

E&S Guidelines Chap. 3; All sections

HW Problem(s) to be assigned

## **Quiz 2**

Chap. 4 – Soil Compaction and Stabilization – All Sections

HW: 4.1, 4.2, 4.4, 4.6, 4.7

Chap. 5 – Water in Soil - Sections 5-1, to 5-4

HW: 5.1, 5.3, 5.4, 5.7, 5.9, Classroom problem(s) as assigned

Introduction to CT DEEP seepage analysis - Sections to be assigned

HW Problems to be assigned

Design Manual Subsurface Sewage Disposal Systems For Households and Small Commercial Buildings  
Connecticut Health Code; Chap. 5 Percolation Testing.

## **Quiz 3**

Chap . 6 – Stress Distribution in Soil – All Sections

HW; 6.2, 6.5, 6.6, 6.8, 6.9

Chap. 7 – Consolidation and Settlement – Sections 7-1 through 7-5, 7-7, 7-9, 7-10

HW: 7.1, 7.2, 7.3, 7.5, 7.11

Chap. 8 – Shear Strength of Soil – All Sections

HW: 8.1, 8.2, 8.3, 8.4, 8.5, 8.7

Chap. 9 - Shallow Foundations – All Sections

HW: 9.1, 9.2, 9.7, 9.13, 9.15

## **Quiz 4**

Chap. 11 - Lateral Earth Pressure – Section 11.1 through 11.5

HW; 11.1, 11.2, , 11.4, 11.6, 11.8

Chap. 12 – Retaining Structure – 12.1 through 12.5

HW: 12.1, 12.2, 12.3 Additional problems as may be assigned.

Chap. 13 – Stability Analysis of Slopes – 13.1 through 13.4

HW: 13.1, 13.2, 13.4 Additional problems as may be assigned.

## Quiz 5

**Capstone Project** – In addition to regular soils labs there will be a capstone project which will be a design, analysis and experimental based project involving soils and other components of the Civil or Environmental programs. The capstone project will include both lecture and lab time. During the second lecture period we will discuss, as a class, the outline of the project. Capstone Projects shall be completed in small groups of two or three students. Additional information will be distributed during the first discussion period.

**Final Grade** – The student's final grade will be based on the weighted average of all quizzes taken and paper(s) written during the semester which will account for 75% of your grade. Assigned homework and class participation will make up 10% and your Capstone Project will be the remaining 15%. No work, makes ups or assignments shall be accepted after the last day of class.

**Home Work (HW)** – Home work assigned on a given lecture period will be due on the following lecture period, unless otherwise modified in class; Students must **SHOW ALL WORK FOR MATH RELATED PROBLEMS**. HW will be graded and returned by the following lecture. Home work will receive a grade of 0, 1, 2, 3, or 4, based on demonstrated effort and level of completeness. Individual problems will not be assessed with regards to specifics. Lecture periods will devote a short review of assigned problems. Answers will be available for all problems, but not all problems will be reviewed in class.

Late home work, unless otherwise excused will be marked at 25% off.

**Quizzes** – Students will be allowed one side of one 8 1/2 x 11 sheet of paper for formulas and conversion factors only (no definitions or other written notes)

Students must have their **calculators for all quizzes, cell phones will not be allowed** as a substitute; failure to bring a calculator will result in lost points as many questions will be impossible to answer without one. Sharing calculators during a quiz will not be allowed. Quizzes will be based on lecture material and all assigned sections of the text or additional materials assigned, and homework.

Quizzes will be assigned a value by the instructor; quiz grades will be the number of points earned on the quiz divided by the total value of the quiz. See Class Attendance regarding missed quizzes.

**Class Attendance** is expected, although, while students will not be penalized for non-attendance they will be responsible for material covered in their absence. It will be the student's responsibility to

determine what assignments, quizzes or material that may have been missed, and to make arrangements to turn in missed work. If students miss a quiz they must be prepared to take the quiz the day they return to class unless other arrangements have been made in advance with the instructor. Should for any reason the quiz is not made up upon return to class it is the students responsibility to make arrangements to take a make up quiz. Any missed quiz **MUST** be made up within one week of the students return to class. Quizzes not made up within one week will count as a “0” in their grade total.

**Class Room Policies** - Cell phones brought to class shall be off and out of site (no texting). Language and behavior that is disrespectful, or disruptive, to others is unacceptable; Students should refer to their Student Handbook for examples of such behavior as well additional school policies.

**Academic Integrity** – Unless indicated by specific assignments, by the instructor, or for group projects, all work for assignments shall be that of the individual student. Cheating on quizzes, using the work of others without proper credit (plagiarism) for assignments, or other forms of academic dishonesty (as defined by the Student Handbook) is unacceptable. If, after evaluation of the potential infraction(s), consistent with the Student Handbook, a grade of “0” for the assignment may be assigned.

**Disabilities** – If you have a visible or hidden disability that may require classroom or test taking modifications you are encouraged to see me and to contact Student Services for assessment.

**Students MUST activate and monitor their TRCC email address. That will be the only email address that I will send information to. Failure to activate will likely result in missed information that could have an impact on your grade.**

**myCommNetAlert – Please sign up.**

myCommNet Alert is a system that sends text messages and emails to anyone signed up in the event of a campus emergency. Additionally, TRCC sends messages when the college is delayed or closed due to weather.

All students are encouraged to sign up for myCommNet Alert. A tutorial is available on the Educational Technology and Distance Learning Students page of the web site. This link is;

[http://www.trcc.commnet.edu/div\\_it/educationaltechnology/Tutorials/myCommNetAlert/MIR3.html](http://www.trcc.commnet.edu/div_it/educationaltechnology/Tutorials/myCommNetAlert/MIR3.html)