Syllabus for Engineering Geology
CE/ENVE 3530 and GSCI 3710

Instructor: Jonathon Drasdis
Department: Civil and Environmental Engineering
Phone number: 486-3211
e-mail: drasdis@ engr.uconn.edu

Lecture: Tuesday, and Thursday, 9:30-10:45 am, Room: Castleman, Room 201
Textbook: Geology for Engineers & Environmental Scientists, by Kehew, 3rd ed. Prentice Hall

Description: Review of the origin, interior and crustal materials of Earth; the natural processes which have built Earth, deformed and torn down the crust throughout geologic time; the environmental relationships between humans and geologic processes and resources stressing application to engineering. Designed for civil and environmental engineering students, but applicable to environmental science. Strong emphasis on geotechnology and the environment.

Grades: Your grade will be based on the mid-term (20%) and final exams (25%), homework problems (25%) and a class project (20%). Exams will reflect your comprehension of materials covered in lecture, text readings and the homeworks. There is a subjective component of your grade (10%) pertaining to your class involvement, participation and interaction during the course.

Important Dates:
- March 1st: Exam I (date tentative)
- March 8th: Spring Break (March 7th – 13th)
- March 16th: Submit detailed project outline (1-2 pgs)
- April 5th: Exam II (date tentative)
- May 6th: Final Exam (date tentative)

Topics covered in class:

a) Intro, Geologic Time and Plate Tectonics
   - Readings: 1-74

b) Earth’s Materials:
   - 1) Minerals and the Rock Cycle
   - 2) Igneous Rocks, Volcanoes
   - 3) Sedimentary Rocks and Processes
   - 4) Metamorphic Rocks and Processes
   - 5) Mechanics of Rock Materials, RQD
   - 6) Stratigraphy, Geologic & Topo Maps
   - 7) Weathering and Erosion
   - 8) Soils (mechanics highlights); Wetland; Clays

c) Geological Processes and Associated Engineering Problems:
   - 1) Tectonic processes and Structural Geology
   - 2) Earthquakes
   - 3) Slope processes
   - 4) Stream processes
   - 5) Coastal processes
   - 6) Groundwater
   - 7) Glacial Geology

Additional Topics: Site Investigation, engineering properties of rocks, case studies, etc.

Notes: *the class project will entail an engineering case study where the site specific geology controlled one of the following: 1) the nature or design of an engineered project, 2) failure of an engineered (designed) structure, or 3) environmental hazard (or potential hazard) exposed due to the reworking of earth materials.