SYLLABUS

CE 412/512 CONTAMINANT FATE, TRANSPORT AND REMEDIATION IN GROUNDWATER

INSTRUCTOR

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CLASS

T-Th 12:35-1:50 ENGR B-42

OFFICE HOURS

T-Th 10-11:30 or by appointment. In addition, I have an open door policy.

TEXT


ADDITIONAL RESOURCES

- Interactive Ground Water (IGW) (www.egr.msu.edu/igw/index1.html)
- MIT OpenCourseWare - Groundwater Hydrology
- MIT OpenCourseWare - Transport Processes in the Environment
- EPA Contaminated Site Clean-Up Information (clu-in.org)
- Interstate Technology Regulatory Council, www.itrcweb.org

CATALOG DESCRIPTION

Mathematics of flow and mass transport in the saturated and vadose zones; retardation and attenuation of dissolved solutes; flow of non-aqueous phase liquids; review of groundwater remediation technologies; review of flow and transport models.

PREREQUISITES

For undergraduate students, CE 310 Environmental Engineering and CE 320 Soil Mechanics. Open to all graduate students in the college of engineering. Graduate students from non-engineering programs are encouraged to inquire about the course since learning and exploring this topic from an interdisciplinary perspective is valuable to all students.

COURSE OBJECTIVES

By the end of the course, students will be able to

- Assess the importance of groundwater locally, nationally and globally
- Explain basic groundwater hydrology
- Model and predict the flow and transport of contaminants in groundwater
- Research technical information
- Describe the development, use and limitations of groundwater remediation technologies
• Prepare and present professional quality term papers and oral presentation

GRADING POLICY

• Homework 25%
• Exams (3) 15%
• Class project 10%
• Checks of Understanding 10%
• Class participation 5%
• Annotated bibliography 5%

For CE 412, the class project will focus on remediation technologies. Students will submit an executive summary and give an in-class presentation. Depending on the size class, this may be a team assignment. Student work will be posted on D2L for peer evaluation.

For CE 512, the class project will focus on modeling. Students will submit a written report and give an in-class demonstration. Student work will be posted on D2L for peer evaluation.

DESIRE TO LEARN PLATFORM (D2L)

Course information will be regularly posted on D2L as opposed to hardcopy distribution in class.

Unless otherwise noted, assignments will be submitted on DropBox in D2L. All files must be named so that I can identify your work (i.e. yourname-hwk#.xlsx).

REQUIREMENTS & CLASS POLICIES

The due dates for homework are posted. Late assignments will be penalized 10% per day.

Three exams will be given during the term, either in-class or as take-home (electronic). This will be announced prior to the exam.

I am absolutely open to email questions (cheval@engr.siu.edu). In the subject line, I recommend using “CEE 412/512: Student Question” to assure that your message is flagged as important to me.

ACADEMIC HONESTY

Academic honesty is the foundation of higher learning for students and teachers. The University policy concerning academic dishonesty will be strictly adhered to. Acts of Academic Dishonesty under the SIUC Student Conduct Code are:

• Preparing work for another that is to be used as that person’s own work
• Cheating by any method or means
• Knowingly and willfully falsifying or manufacturing scientific or educational data and representing the same to be the result of scientific or scholarly research
• Knowingly furnishing false information to a University official relative to academic matters
• Soliciting, aiding, abetting, concealing, or attempting conduct in violation of this Code

Any violation of the policy can result in immediate failure of this course or other sanctions, as outlined in the Student Conduct Code.

ADDITIONAL INFORMATION

Syllabus Attachment for all SIUC Courses (in D2L folder Course Overview)