

Geology 115 - Hydrogeology

Spring, 2008

Instructor: Dr. Linda Reinen
Office: 242 Edmunds, 621-8672
Office hours: Mondays 2-4 PM, or by appointment
Meeting Times: Thur, 1:15 – 4:00, 130 Edmunds



San Antonio Creek near Shinn Road in flood stage, January 2005

Required text:

Applied Hydrogeology (4th edition) C. W. Fetter

Expectations:

- Email – I use email regularly to pass along important class information (schedule changes, changes to homework assignments, etc.). Please make sure that I have your correct email address, and that you check your account regularly. You can reach me at: ltreinen@pomona.edu
- Assignments. You may work with other students when completing homework assignments, but the work you turn in must be your own! Pomona College has strict rules concerning academic honesty; if you have any questions on this, see the student handbook and/or come see me.
- If you must miss part or all of a class, please have the courtesy to inform me in advance.
- Participation on the San Antonio Canyon field trip (**Thursday, Feb 14, 11-6 PM**). Mark this important date on your calendar! Come prepared to get wet (wear appropriate shoes).
- Attendance at the geology department lecture series. Several times during the semester we invite outside speakers to the department. The first two are Wednesday evening, Feb 6 and Thursday morning, Feb 7 at 11. I'll pass along more information as it comes in.
- All homework assignments are due at the beginning of the class period. If you are late to class, so is your assignment!
- Assignment due dates and times are specific. If, due to extenuating circumstances, you need to alter the date an assignment is due, see me at least two days prior to the due date to discuss your options.
- Quizzes will be taken when specified. No make-up quizzes will be given. If you have a conflict or a medical excuse, please see me as soon as possible. There is no final exam for this class.

Grading scheme:

• Homework assignments	45 %
• Quizzes (cumulative)	30 %
• Groundwater modeling project	15 %
• Effective team member	5 %
• Attitude, enthusiasm, class participation	<u>5 %</u>
	100 points possible

At the end of the semester, your total number of points will be normalized to 100% and a letter grade will be assigned according to the following distribution:

A (95-100%); **A-** (90-94%); **B+** (87-89%); **B** (83-86%); **B-** (80-82%); **C+** (77-79%);
C (73-76%); **C-** (70-72%); **D** (60-69%); **F** (59% or less)

Course Topics (tentative)

Topic	Chapter
Background:	
Introduction, hydrologic cycle	1, 2
Elements of the hydrologic cycle	2
Water in soils and aquifers	3, 6
Groundwater flow (fundamentals, regional):	
Hydraulic variables	3
Potential energy and hydraulic head	4
Regional groundwater flow	7
Geologic influence on GW occurrence:	
Geology of groundwater occurrence	3, 8
Groundwater Provinces of US	8
Groundwater flow to wells:	
Equations of groundwater flow	4
Well tests	5
Groundwater chemistry (natural, anthropogenic):	
Groundwater chemistry	9
Groundwater quality and contamination	10
Special topics?	

Groundwater Model

Beginning in mid-April, we will begin the groundwater modeling portion of the class. Please take time to think about an area you would like to model. Basic required criteria:

- An area in the United States with which you are familiar (hometown? Favorite vacation spot?)
- Unconfined aquifer
- Water data are available (surface and/or groundwater elevations)

Preferred criteria:

- Observation well data available

Quizzes

The quizzes are tentatively scheduled during weeks 4, 8, and 13 of the semester. I may change the time of a quiz, but will give you notice beforehand.