Hydrogeology (01:460:428)

Time & Place: Fall 2020, Thursdays, 5:00-8:00pm (double period)
WebEx, synchronous, recorded per student request

Instructor: Ying Fan Reinfelder (yingfan@eps.rutgers.edu)

Office Hour: (1) Mondays 1:00-6:00pm, Thursdays 3:00-5:00pm (before class)
(2) By Appointment
via WebEx meeting room: https://rutgers.webex.com/meet/yingfan

Required Text: Groundwater, by R.A. Freeze and J.A. Cherry, Prentice-Hall; Free pdf at:
http://www.amazon.com/Groundwater-R-Allan-Freeze/dp/0133653129
Second edition coming as open eBook: http://gw-project.org/

Structure: New material 3:20 – 5:00pm, Exercise/Homework 5:15 – 6:20pm
Homework due in one week; submit online as a single pdf file
One exam, open book, open notes, at and within class time
One final project on groundwater modeling, using Visual MODFLOW
software will be distributed to install on student personal computers

Grading: 10 Homework/Lab Assignments = 50%
Exam = 40%
Final Project = 10%
Grading scale: see table to the right

A	>= 93
B+	>= 86
B	>= 79
C+	>= 72
C	>= 65
D	>= 52

Schedule:

Week	Subject	Reading	Exercise - Homework
1 (Sep 9)	Groundwater in the hydrologic cycle, Darcy's Law and the hydraulic head	1, 4, 2.1-2.2	HW-1
2 (Sep 16)	Hydraulic properties of porous media and geologic formations	2.3-2.5, 2.7, 2.10	HW-2
3 (Sep 23)	Aquifers, Characterizing groundwater flow	5.1, 6.1	HW-3 (Lab-1)
4 (Sep 30)	Equations of groundwater flow	2.11-2.12	HW-4 (Lab-2)
5 (Oct 7)	1-D steady-state flow	Handouts	HW-5
6 (Oct 14)	Flow to pumping/injecting wells	8.3	HW-6
7 (Oct 21)	Aquifer boundaries and interfering wells	8.3	HW-7
8 (Oct 28)	Measuring aquifer properties	8.4-8.7	HW-8
9 (Nov 4)	Flow in unsaturated media	2.6, 6.4	HW-9
10 (Nov 11)	Solute/energy transport processes	2.13, 9.2	HW-10 (Lab-3)
11 (Nov 18)	**One and Only Exam**		
12 (Nov 25)	**No class** (before Thanksgiving, Friday Class)		
13 (Dec 2)	Exam Review, Groundwater Modeling		Visual MODFLOW Tutorial Project
14 (Dec 9)	Advanced Topics		Short Final Report