SYLLABUS

CE 520 GROUNDWATER DYNAMICS

Section: 001  CRN 17641  3 credits  Spring 2013.

January 14, 2013

Catalog Description:

CE 520. Groundwater Dynamics. 3 Hours. PR: Consent. Introduction to groundwater, formulation of equations for saturated and unsaturated flow, analytical solutions for steady and transient cases, transport of pollutants, and numerical techniques. (3 hr. lec.).

Desirable Background:

1. Familiarity with elementary hydraulics; especially the concepts of density, pressure, head, and flowrate.
2. Familiarity with multivariable calculus including partial differentiation and Taylor's series.
3. Familiarity with elements of hydrology.

Instructor:  Dr. Donald D. Gray, Room 641a ESB, 304-293-9933
Donald.gray@mail.wvu.edu


Class Hours: MWF 10:00-10:50, Room 211 ESB

Office Hours: To be announced.

Grading:  Class participation  5%
Homework  15%
Project  20%
Test 1  20%  Friday, February 15
Test 2  20%  Friday, March 15
Test 3  20%  Friday, April 26

Make-up tests will be allowed only in documented cases of illness or emergency.

Dishonesty on tests is a serious violation of both academic and professional ethics. The penalty in such cases will be the unforgivable F.
Attendance policy:

I strongly encourage you to attend every class session. I will not take attendance, but if I collect written in-class work or call on you and you are not present, you will lose points.

Accomodations:

If you have a disability and anticipate needing any type of accommodation in order to participate fully in this class, advise the instructor and make appropriate arrangements with the Office of Disability Services (304-293-6700).

Course Web Site:

Most official communication concerning the course, including reading assignments, homework assignments, and test announcements, will take place through the CE 520 eCampus web site. The web site allows you to check your grades, obtain assignments, and to communicate with the instructor and fellow students through e-mail.

Classroom Behavior:

Do: Turn off your cell phone ringer or pager at the start of class.

Do: Behave in a professional manner. Be on time, stay awake, pay attention, take notes using at least two colors of ink. You may eat or drink if you need to.

Do: When I assign in-class work, use a loose sheet that you can hand in (be sure your name and the date are on the page).

Do not: Sleep, read the paper, text, use electronic media, study for other classes, or talk to neighbors except when assigned to do so.

I understand that you may occasionally be late due to unavoidable circumstances. If you are late, you will probably find that the door is closed, but not locked. Enter, close the door behind you, and take your seat. If the door is locked, knock and it will be opened.
GROUNDWATER REFERENCES

I. Introductory texts


II. Advanced general texts

Bear, 1972. Dynamics of Fluids in Porous Media, Elsevier. (Also Dover paperback)


III. Mostly numerical modeling


IV. Contaminant transport


V. Journals

Water Resources Research

Ground Water

Journal of Hydrology

Journal of Hydraulic Engineering (ASCE)

Journal of Irrigation and Drainage Engineering (ASCE)

Journal of Water Resources Engineering (ASCE)

Journal of Water Resources Planning and Management (ASCE)