

HYDROGEOLOGY

All readings refer to Fetter: Applied Hydrology 4th ed. unless otherwise indicated

Geology 556 website: <http://www.humboldt.edu/~geology/courses/geology556>
 When requested on the site use: **name:** geodept **password:** students

DAY	TOPICS	READING
22-Jan 24	Introduction; nature and classification of groundwater Permeability and porosity	Ch 1; Ch 2 3.1- 3.3; 6.1- 6.2
29	Hydraulic head and Darcy's Law	3.4- 3.5; 4.1- 4.6
31	Hydraulic head and Darcy's Law	3.4- 3.5; 4.1- 4.6
31	LAB 1: Fluid properties	4.1- 4.3
5-Feb 7	Capillarity and unsaturated flow Storativity and specific yield	3.6- 3.10; 6.3- 6.7 3.3; 3.9- 3.12
12	Basic equations of groundwater flow	4.7- 4.12
14	Basic equations of groundwater flow: confined aquifers	4.7.1, 4.13
14	LAB 2: Properties of porous media	3.2- 3.3; 6.1- 6.2
19	Basic equations of groundwater flow: unconfined aquifers	4.7.2, 4.14
21	Computations for unconfined aquifers	4.14
26	Flow in the unsaturated zone	Ch. 6
28	Well hydraulics	5.1- 5.3
28	LAB 3: Computations of groundwater flow	Ch. 4
4-Mar 6	Well hydraulics: pumping tests Well hydraulics: pumping tests	5.4- 5.10 5.4- 5.10
11	Flow nets	4.8- 4.12
13	Saltwater intrusion	8.7- 8.9
13	LAB 4: Wells and pumping tests	Ch. 7
17-21	SPRING BREAK	
25	Regional groundwater flow	7.1- 7.6
27	MIDTERM (during lab time)	
27	Groundwater and surface water interactions	7.7
1-Apr 3	Groundwater geology Hydrologic budgets	Ch. 8 12.2- 12.3
3	LAB 5: Flow nets	4.8- 4.12
5	FIELD TRIP to measure flow rates and water table: 9 - 5 (Saturday)	
8	Hydrologic budgets	11.1- 11.3
10	Safe yield, land subsidence, and artificial recharge	Ch. 11; 2.12
15	Numerical modeling of groundwater flow	Ch. 13
17	Numerical modeling of groundwater flow	Ch. 13
17	LAB 6: Exercise based on field trip data	
22	Groundwater exploration; geophysical methods	Ch. 12
24	Groundwater chemistry	Ch. 10
29	Isotopes in groundwater studies	9.12
1-May 1	Quality of groundwater LAB 7: Numerical Modeling of Groundwater Flow	10.1-10.6
6	Groundwater contamination	10.7-10.10
8	Groundwater contamination	Ch. 10
11-May	FINAL EXAM : Thursday 1:00- 3:00 PM (comprehensive)	

Grading: Labs: 60%
 Midterm: 20%
 Final: 20%