

## Environmental Geology Calendar: Fall 2018

| Week  |        | Monday Lecture   | Wednesday Lecture  | Friday Lecture   | Field Trip/Lab  |  |
|---|--------|--|--|--|---|--|
| Week 1  | 27-Aug | Introduction; McPhee's essay on Nevada Water                   | Class Logistics (Chpt. 1 assigned)   | Huntington River Lab 2: Drawing stream profiles, Calculating discharge, etc.                       | Measuring stream discharge in the Huntington River                                  |  |
| Week 2  | 3-Sep  | <b>Labor Day Holiday</b>                                       | Huntington River Lab 2 (cont)  | Geologic Materials: Surficial Materials, Rocks, Minerals; Campus Outcrop Map                       | <b>No Labs this week</b>  |  |
| Week 3  | 10-Sep | Classes of Minerals (Chpt. 2 assigned)                         | <b>1st Quiz;</b> Minerals (cont); Rock Groups  | Geologic Maps/Contacts; Geologic Time Scale (Vt Geol. Map Exercise assigned, Chapter 24 assigned)  | North Beach: Surveying a beach and water table profile                              |  |
| Week 4  | 17-Sep | The Modern Ice Age   | Glacial Materials/ Environments in Vermont   | Glacial Materials/ Environments in Vermont   | Town Line Brook: Glacial Geologic Materials and History                             |  |
| Week 5  | 24-Sep | Oxygen Isotopes; (Isotope homework assigned)                   | <b>2nd Quiz;</b> Glacial History of New England)   | Vermont's Bedrock History (Geology of Vermont by B. Doolan assigned)                               | Charlotte Landfill Field Trip: Geologic Setting and Groundwater table measurements. |  |
| Week 6  | 1-Oct  | Introduction to Groundwater; Water Table (Heath pp 1-5)        | Aquifers, Groundwater Recharge, Groundwater Discharge  | <b>1st Midterm Exam</b>  | Shaws Supermarket, Salmon Hole: Local bedrock geology; groundwater flow in rock     |  |
| Week 7  | 8-Oct  | <b>FALL RECESS</b>   | Porosity Experiments/ Definitions; Specific Yield/ Specific Retention, Surface Area of sediments                                 | <b>No Class:</b> New England Intercollegiate Field Conference                                      | <b>No Labs this Week</b>  |  |
| Week 8  | 15-Oct | Weathering Processes: Formation of Soils and Caves             | Environmental Hazards associated with Karst (Schneiderman Chpt 21); Hydrolysis   | Oxidation, Acid Mine Drainage; Weathering and soils  | Winooski Gorge: Glacial history; Marble history; Karst hazards and hydrology        |  |
| Week 9  | 22-Oct | <b>No Class:</b> Geological Society of America Meeting         | <b>3rd Quiz;</b> Water Supply Wells: construction techniques; Cone of Depression (Schneiderman, Chpt 13; Heath pp. 30-33, 52-55) | Background Groundwater Chemistry: Hardness, Common dissolved ions in groundwater (Heath pp. 64-69) | Landfill II: Contouring the water table; Drawing a geologic cross-section           |  |
| Week 10   | 29-Oct | Septic Systems: How do they work & Site limitations            | Septic Systems (cont)  | Darcy Tube Experiments (Heath pp 12-13); Vertical Groundwater Movement (Heath pp. 10-13, 21-23);   | Perc Tests for septic systems at a local site                                       |  |
| Week 11   | 5-Nov  | Gasoline Spills: Contaminant phases and Remediation Techniques | <b>4th Quiz;</b> Remediation Techniques (cont); (Schneiderman Chpt 23)   | Groundwater Remediation Techniques (cont)  | Groundwater Contamination and Remediation: Air National Guard Base                  |  |
| Week 12   | 12-Nov | Introduction to Final Project                                  | <b>2nd Midterm Exam</b>  | Road Salt contamination; Groundwater responses to Sea Level Change                                 | Barge Canal Superfund Site: Site history, geologic history, hydrology               |  |
| Week 13   | 19-Nov | <b>THANKSGIVING RECESS</b>                                     |  |  |   |  |
| Week 14   | 26-Nov | Radioactive Decay Processes, Carbon-14 dating                  | Introduction to the geology of oil and gas   | Geologic Hazards associated with gas extraction from shale   | Geologic Dating Lab; Relative Sea Level Change in Maine                             |  |
| Week 15   | 3-Dec  | Final Project: Background Geology                              | <b>5th Quiz;</b> Final Project: Groundwater flow and contaminant migration   | Last Class, Class Evaluations,   | <b>No Lab this Week</b>   |  |
| Week 16   | 10-Dec | <b>Finals Week</b>   |  | <b>Final Project Due Friday December 14</b>  |   |  |
| Reading assignments labeled "Schneiderman" refer to your book "The Earth Around Us."                    |        |  |  |  |   |  |
| "Heath" refers to the paperback publication (course pack) "Basic Ground-water Hydrology" by R.C. Heath. |        |  |  |  |   |  |