GEOL 320.01: Global Water Cycle

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Recommended Citation
hhttps://scholarworks.umt.edu/syllabi/3217
Objective: This course provides a broad introduction to the chemistry of different water reservoirs (e.g., atmosphere, groundwater, seawater) in the hydrological cycle. Little chemical background is required for this course because it uses compounds merely as tracers through the hydrological cycle. Any chemical concepts are introduced and thoroughly discussed as needed. The prerequisite is one semester of college chemistry.

Evaluation: Students are evaluated on in-class, group and take-home assignments and class participation. Tests are used to document learning. Most tests are in-class, closed or open book tests.

Expectations: At the end of the semester, students are expected to have a general understanding of how water picks up chemical attributes, as it moves through the hydrological cycle. Students will not become experts in any one topic but will have some basis from which to continue studies.

Approach: My general approach involves the description of chemical attributes of different reservoirs of the hydrological cycle with some discussion of how changes occur as water moves from one to the next reservoir.

Field Trip: This course has a field trip associated with it. Students must attend the field trip or prepare a significant review paper on a topic of my choosing.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>9/3, 5</td>
<td>Hydrological cycle, energy cycling</td>
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<tr>
<td>9/10, 12</td>
<td>Air chemistry</td>
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<tr>
<td>9/17, 19</td>
<td>Ozone, aerosols</td>
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<td>9/24, 26</td>
<td>Ran and atmospheric chemistry</td>
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<td><strong>Last Day to Receive a Refund for Classes Dropped, 9/24</strong></td>
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<tr>
<td>10/1, 3</td>
<td>Gases in rain</td>
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<tr>
<td>10/8, 10</td>
<td>Review, exam Thursday</td>
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10/15, 17  10/15 no class, Chemical weathering,
   Last Day to Drop/Add Classes,
   Change Sections, or Change Grading Options, 10/15

10/22, 24  Groundwater chemistry

10/29, 31  River chemistry

11/5, 7    Nutrients in river water

11/12, 14  Lake chemistry

11/19, 21  Estuarine chemistry

11/26     Ocean chemistry

12/3, 5    Ocean chemistry

12/10, 12  Ocean chemistry

12/17     Final Exam, 3:20 – 5:20 PM