GEOSCIENCES 262: ROCKS AND MINERALS
FALL 2012

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TEACHING ASSISTANT: Amy Tuzzolino Reich 312 X7585 altuzzolino@alaska.edu

TIME: LECTURES - MW 10:30-11:30 a.m. LAB - Th 2:00-5:00 p.m.
PLACE: Reichardt 237

CLASS DESCRIPTION: An overview of mineral & rocks - their identification, classification, mode of formation, & economic applications.

CLASS FORMAT: Lectures twice a week, one of which may be a discussion/group learning exercise. Reading assignments are to be read before the class for which they are assigned. The once-a-week Lab will emphasize practical techniques for mineral and rock identification such as physical properties, X-ray diffraction, and optical characteristics. A few videos and very short field trips will be included. GUEST LECTURES ARE POSSIBLE.


date         lecture topic                        reading assignment
9/5          introduction to minerals & rocks       pp. 1-2; skim pp. 19-45.
9/10         mineral properties and classification pp. 111-128
9/12         non-silicate minerals 1               pp. 140-144.
9/17         non-silicate minerals 2               additional handout
9/19         silicate minerals 1                  pp. 128-140.
9/24         silicate minerals 2
9/26         crystallography in one easy lesson     pp. 75-89.
10/1         exam 1 (minerals)
10/3         rock classification                   pp. 3-18.
10/8          igneous rocks                       pp. 182-211.
10/10        occurrence of intrusive igneous rocks pp. 212-234.
10/15        volcano videos                     pp. 234-263.
10/22        sedimentary rocks                   pp. 295-327.
10/24        sedimentary processes              pp. 365-398.
10/29        sedimentary environments            pp. 399-437.
10/31        diagenesis, weathering, and soils   pp. 328-364.
11/5         metamorphic rocks                   pp. 438-454.
11/7         occurrence of metamorphic rocks      pp. 481-540.
11/12        exam 2 (igneous and sedimentary rocks)
11/14 structure and properties of metamorphic rocks
11/19 metamorphic rocks in the field
11/26 types and settings of ore deposits pp. 541-565.
11/26 optical mineralogy in one easy lesson skim pp. 145-163.
12/3 rock properties and engineering additional handout
12/5 review session, special topics
12/10 exam 3 (Comprehensive)

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<thead>
<tr>
<th>date</th>
<th>LABORATORY TOPICS</th>
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<tbody>
<tr>
<td>9/6</td>
<td>mineral classification &amp; diagnostic properties</td>
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<tr>
<td>9/13</td>
<td>non-silicate mineral identification</td>
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<tr>
<td>9/20</td>
<td>other mineral properties of interest and more mineral identification</td>
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<tr>
<td>9/27</td>
<td>silicate mineral identification</td>
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<td>10/4</td>
<td>plutonic rocks</td>
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<td>10/11</td>
<td>* mineral quiz *</td>
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<td>10/18</td>
<td>volcanic rocks</td>
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<td>clastic sedimentary rocks</td>
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<td>11/1</td>
<td>non-clastic sedimentary rocks</td>
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<td>11/8</td>
<td>metamorphic rocks</td>
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<td>11/15</td>
<td>rocks in the field</td>
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<td>11/29</td>
<td>microscopic examination of rocks</td>
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<td>12/6</td>
<td>rock lab quiz</td>
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GRADING: GRADES WILL BE BASED ON BOTH LAB AND LECTURE PARTICIPATION. LECTURE IS WORTH 2/3 OF THE FINAL GRADE, BASED ON THE 3 EXAMS, OCCASIONAL HOMEWORK ASSIGNMENTS, AND THE ODD POP QUIZ, AS WELL AS ZEAL AND CLASS PARTICIPATION. THE LAB 1/3 WILL BE BASED ON LAB QUIZZES, OCCASIONAL LAB WRITE-UPS, AND ATTENDANCE.

Disability Services: The Office of Disability Services implements the Americans with Disabilities Act (ADA) and insures that UAF students have equal access to the campus and course materials. This class will work with the Office of Disabilities Services (203 WHIT, 474-7043) to provide reasonable accommodation to students with disabilities. Make sure to let the instructor know if there are concerns of this type.