### I. ASCRC General Education Form

<table>
<thead>
<tr>
<th>Group</th>
<th>Group XI Natural Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dept/Program</td>
<td>Geosciences</td>
</tr>
<tr>
<td>Course Title</td>
<td>General Geology</td>
</tr>
<tr>
<td>Prerequisite</td>
<td>None</td>
</tr>
<tr>
<td>Credits</td>
<td>3</td>
</tr>
</tbody>
</table>

### II. Endorsement/Approvals

Complete the form and obtain signatures before submitting to Faculty Senate Office

<table>
<thead>
<tr>
<th>Please type / print name</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor</td>
<td>Julia Baldwin</td>
<td>8/25/08</td>
</tr>
<tr>
<td>Phone / Email</td>
<td>5778</td>
<td></td>
</tr>
<tr>
<td>Program Chair</td>
<td>William Woessner</td>
<td></td>
</tr>
<tr>
<td>Dean</td>
<td>Gerald Fetz</td>
<td></td>
</tr>
</tbody>
</table>

### III. Description and purpose of the course:

General geology including the work of wind, flowing water, glacial ice, gravity, earthquakes, volcanoes and plate tectonics in shaping the earth. Course emphasizes the relevant local geology and the relevance of the geosciences to solving societal problems.

### IV. Criteria:

Briefly explain how this course meets the criteria for the group. See: [http://www.umt.edu/facultysenate/ASCRCx/Adocuments/GE_Criteria5-1-08.htm](http://www.umt.edu/facultysenate/ASCRCx/Adocuments/GE_Criteria5-1-08.htm)

1. Courses explore a discipline in the natural sciences and demonstrate how the scientific method is used within the discipline to draw scientific conclusions.

   All of the topics in this course are placed within the framework of the scientific method. Students are encouraged to evaluate the information presented critically. The course covers an extremely wide range of Earth processes from volcanic hazards to groundwater contamination. In all of these cases, students are challenged to understand the process of science and how we have come to understand the way the Earth works.

2. Courses address the concept of analytic uncertainty and the rigorous process required to take an idea to a hypothesis and then to a validated scientific theory.

   Students are presented topics in such a way that they understand how earth processes operate and why using the scientific method and process of science as a framework.

3. Lab courses engage students in inquiry-based learning activities where they formulate a hypothesis, design an experiment to test the hypothesis, and collect, interpret, and present the data to support their conclusions.

   The accompanying lab, Geology 101, includes numerous hands-on activities including identification of rocks and minerals, field trips, reading geologic maps, and various computer activities.

### V. Student Learning Goals:

Briefly explain how this course will meet the applicable learning goals. See: [http://www.umt.edu/facultysenate/ASCRCx/Adocuments/GE_Criteria5-1-08.htm](http://www.umt.edu/facultysenate/ASCRCx/Adocuments/GE_Criteria5-1-08.htm)

1. understand the general principles associated with the discipline(s) studied

   Course is a broad survey course covering major topics in physical geology
2. understand the methodology and activities scientists use to gather, validate and interpret data related to natural processes

Students are presented topics in such a way that they understand how earth processes operate and why, so that they finish with the ability to interpret the geology of an unfamiliar landscape.

3. detect patterns, draw conclusions, develop conjectures and hypotheses, and test them by appropriate means and experiments

Critical thought exercises are interspersed throughout the lecture. Assignments provide students the opportunity to explore lecture topics in greater detail.

4. understand how scientific laws and theories are verified by quantitative measurement, scientific observation, and logical/critical reasoning

The emphasis of Geology 100 is to understand how and why Earth Systems processes operate. Real examples and data are presented so that students can see and learn how science operates.

5. understand the means by which analytic uncertainty is quantified and expressed in the natural sciences

Real datasets are presented often so that students can see how data is presented, verified, and evaluated.

VII. Syllabus: Paste syllabus below or attach and send digital copy with form. The syllabus should clearly describe how the above criteria are satisfied. For assistance on syllabus preparation see: [http://teaching.berkeley.edu/bgd/syllabus.html](http://teaching.berkeley.edu/bgd/syllabus.html)

---

**Geology 100N, Sect. 1 – Spring 2008**

Instructor: Julie Baldwin  
email: [julie.baldwin@umontana.edu](mailto:julie.baldwin@umontana.edu)  
Office: Griz Stadium Sky Box Suite 110B*  
* The 3rd floor of CHCB is undergoing asbestos abatement, so the Geosciences Department has been relocated to the football stadium Sky Boxes on the west side.  
Phone: 243-5778

**Class Meetings:** MW from 11:10 AM - 12:00 PM, CHCB 131

**Course Objectives:** What are minerals? How do rocks form? Can rocks bend? How do we know the age of rocks? This course will explore these questions through a study of the fundamentals of earth processes and materials. We will examine the geological processes responsible for shaping Earth, including processes that build mountains and erode them, processes that create new rocks and minerals, transform them, and destroy them. We will emphasize learning how processes operate, so that you can examine a region that hasn’t been discussed and consider which processes may be active there and why.

**Office Hours:** MW 2-3PM, or by appointment. What to ask me during office hours: Specific questions about course materials, general questions about geology, questions about what geologists do with their lives. If you have a general question that might be of interest to the whole class, please post this to the Discussion Board on the Blackboard website so that everyone may benefit from reading the answer.

**Course Website:** This course will use Blackboard ([http://courseware.umt.edu/](http://courseware.umt.edu/)). You should
get in the habit of checking the course website DAILY for course announcements, notes, and assignments. For instructions on obtaining your NetID, go to http://www.umt.edu/it/netid/whatisnetid.htm.

Textbook: Essentials of Geology, Second Edition, by Stephen Marshak (ISBN: 0393928152). This textbook is also available as an e-book at half the price of the hard copy. You can purchase a code to access the e-book at the university bookstore. The textbook website is available at http://www.wwnorton.com/earth. This site has an online study guide (also included as a CD-ROM when you purchase the textbook).

i>clickers: REQUIRED. You must bring these to every class. You can purchase your clicker at the bookstore (ISBN: 0716779390). The website is www.iclicker.com. You must visit this website after purchasing your clicker and using it once in class. Then go to the website and register it. Use your NetID (the user name that you use when logging into Blackboard) when registering your clicker and enter your name exactly as it appears in the official university directory. Any students caught cheating by bringing a fellow student’s clicker to class in their absence will both receive an automatic F for the course and will be subject to academic penalty by the University.

Course Evaluation:
Midterm Exam 1 – 25%
Midterm Exam 2 – 25%
Final Exam – 35%
Clicker grade – 15%

Final grade: over 90% = A, 80-89% = B, 70-79% = C, 60-69% = D, 59% or below = F

Exams: There will be two midterms and a comprehensive final exam, all multiple choice. All material covered in lecture and in the text (see chapters in syllabus below) is fair game. Exams will have a different format than you are probably used to in that they will in part be collaborative. Details will be given in class about this test-taking method (part will be closed book working alone, followed by collaborative group test taking). Absolutely no make-ups will be allowed. In the event that you miss a midterm exam, your final exam grade will be substituted for it.

Lecture Class Attendance: REQUIRED. The i>clicker will be used at every class period, so that your attendance and participation may be monitored.

<table>
<thead>
<tr>
<th>DATE</th>
<th>LECTURE TOPIC</th>
<th>READING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/23</td>
<td>Introduction and scientific method</td>
<td>Prelude (p. 1-7)</td>
</tr>
<tr>
<td>1/28</td>
<td>The Earth in Context</td>
<td>Ch. 1</td>
</tr>
<tr>
<td>1/30</td>
<td>The Earth in Context, cont’d</td>
<td>Ch. 1</td>
</tr>
<tr>
<td>2/4</td>
<td>Continental Drift</td>
<td>Ch. 2</td>
</tr>
<tr>
<td>2/6</td>
<td>Plate Tectonics</td>
<td>Ch. 2</td>
</tr>
<tr>
<td>2/11</td>
<td>Minerals</td>
<td>Ch. 3</td>
</tr>
<tr>
<td>2/13</td>
<td>Minerals</td>
<td>Ch. 3 &amp; Interlude A (p. 95-101)</td>
</tr>
<tr>
<td>Date</td>
<td>Topic</td>
<td>Section/Chapter</td>
</tr>
<tr>
<td>-------</td>
<td>---------------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>2/18</td>
<td>PRESIDENT'S DAY – NO CLASS</td>
<td></td>
</tr>
<tr>
<td>2/20</td>
<td>Igneous Rocks</td>
<td>Ch. 4</td>
</tr>
<tr>
<td>2/25</td>
<td>Igneous Rocks</td>
<td>Ch. 4</td>
</tr>
<tr>
<td>2/27</td>
<td>Volcanoes</td>
<td>Ch. 7</td>
</tr>
<tr>
<td>3/3</td>
<td>MIDTERM #1</td>
<td></td>
</tr>
<tr>
<td>3/5</td>
<td>Weathering &amp; Soils</td>
<td>Ch. 5</td>
</tr>
<tr>
<td>3/10</td>
<td>Sedimentary Rocks</td>
<td>Ch. 5</td>
</tr>
<tr>
<td>3/12</td>
<td>Sedimentary structures &amp; environments</td>
<td>Ch. 5</td>
</tr>
<tr>
<td>3/17</td>
<td>Metamorphism</td>
<td>Ch. 6 &amp; Interlude B (p. 174-177)</td>
</tr>
<tr>
<td>3/19</td>
<td>Earthquakes</td>
<td>Ch. 8</td>
</tr>
<tr>
<td>3/24-28</td>
<td>SPRING BREAK – NO CLASS</td>
<td></td>
</tr>
<tr>
<td>3/31</td>
<td>Earthquakes</td>
<td>Ch. 8 &amp; Interlude C (p. 240-247)</td>
</tr>
<tr>
<td>4/2</td>
<td>Deformation and Mountain Building</td>
<td>Ch. 9</td>
</tr>
<tr>
<td>4/7</td>
<td>Deformation and Mountain Building</td>
<td>Ch. 9</td>
</tr>
<tr>
<td>4/9</td>
<td>MIDTERM #2</td>
<td></td>
</tr>
<tr>
<td>4/14</td>
<td>Fossils &amp; Relative Geologic Time</td>
<td>Ch. 10 &amp; Interlude D (p. 273-282)</td>
</tr>
<tr>
<td>4/16</td>
<td>Absolute Geologic Time</td>
<td>Ch. 10</td>
</tr>
<tr>
<td>4/21</td>
<td>Streams and Floods</td>
<td>Ch. 14</td>
</tr>
<tr>
<td>4/23</td>
<td>Groundwater</td>
<td>Ch. 16</td>
</tr>
<tr>
<td>4/28</td>
<td>Glaciers and Ice Ages</td>
<td>Ch. 18</td>
</tr>
<tr>
<td>4/30</td>
<td>Global Change</td>
<td>Ch. 19</td>
</tr>
<tr>
<td>5/5</td>
<td>FINAL EXAMINATION</td>
<td>10:10 AM -12:10 PM</td>
</tr>
</tbody>
</table>

**Disabilities Services:**
These include access issues, auxiliary aids, special test-taking arrangements, etc. Please refer to p. 348 of the catalog or see the instructor.

**Academic Integrity:**
All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University.

All students need to be familiar with the Student Conduct Code. The Code is available for review online at [http://www.umt.edu/SA/VPSA/index.cfm/page/1321](http://www.umt.edu/SA/VPSA/index.cfm/page/1321)

*Please note: As an instructor of a general education course, you will be expected to provide sample assessment items and corresponding responses to the Assessment Advisory Committee.*