Instructor: Hi. I'm Jeanne Fromm and I am an environmental geologist and geology instructor. I am looking forward to sharing my enthusiasm and experiences with you. My appreciation of the natural world is always growing and the more I see, the more I learn. The picture below shows me at white sea-cliffs that are common along the southwest coast of England. The English Channel is in the background. These famous cliffs are sedimentary rocks made from tiny planktonic creatures, similar to the one pictured above, that lived in marine water about 70-100 million years ago during a time interval geologists call the Cretaceous. These rocks are full of well-preserved fossils that indicate what life and the environment was like at that time.

In South Dakota, light-colored cliffs along the Missouri River contain similar Cretaceous-aged rocks called the Niobrara Chalk. These rocks were deposited when an ocean called the Interior Seaway flooded most of South Dakota between 65 and 75 million years ago (map on next page). Many kinds of dinosaurs roamed the shorelines and swam in the seas, and other reptiles filled the skies. Their days were numbered, though, because somewhere out in space a meteor was heading toward a catastrophic collision with Earth that would kill all dinosaurs, and many other species, 65.5 million years ago (map of impact site shown page 3). This course explains how Earth scientists uncovered this story, and many others, by studying the rock record. The rocks of Planet Earth tell many marvelous and fascinating tales.

Course Overview: This course studies the origin, history, and dynamic nature of Earth systems through geologic time. You will learn about Earth materials and processes from a systems perspective and see how the physical and biological components have been, and are, interrelated. After a review of geology (rocks, minerals, sedimentary environments, correlation/dating, & plate tectonics), ecology (environments and chemical cycles), and biology (life’s diversity, taxonomy, & evolution/fossil record) the story of the Earth system is examined from its origin in the Hadean Eon to the modern world we live in which geologists the Holocene. The last pages of the welcome letter are visual overviews (from textbook) of the material typically covered in the Earth system history portion of the course.
Coursework & Grading: Letter grades are assigned based upon student performance in all course work exactly as summarized in the following table. Students MUST also have a passing grade (≥55%) in both the laboratory and exam components in order to pass this course. No extra credit opportunities are offered in this course.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>% of Total Grade</th>
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</thead>
<tbody>
<tr>
<td>Lab Exercise</td>
<td>15 total, not supervised 1 per week</td>
<td>25</td>
</tr>
<tr>
<td>Lab Quiz</td>
<td>15 total, not supervised 1 per week, 12 questions and 15 minutes per quiz</td>
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</tr>
<tr>
<td>Topic Quiz</td>
<td>20 total, not supervised 1 per week (sometimes 2), 10 questions and 15 minutes per quiz</td>
<td>15</td>
</tr>
<tr>
<td>Exam</td>
<td>4 total-supervised by proctor or testing center 1 about every 4 weeks, 75-85 questions &amp; 60 minutes per exam</td>
<td>60</td>
</tr>
</tbody>
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- The grading scale is 85-100% = A, 75-84% = B, 65-74% = C, 55-64% = D, and below 55% = F = Failing.
- Students may email or "page" instructor anytime for help with D2L or the course content. Expect a response within 24 hours, except between 5:00 PM Friday and 8:00 AM Monday. Instructor is always online during office hours and can communicate using Skype when prearranged by email.
- Course requires a minimum time commitment of 12 hours per week during the term, so be realistic about your current work schedule and personal commitments.
- Success in this online course depends on student participation and commitment to the time requirement, a reliable computer and internet connection, and having the course materials when the term begins.

Global paleogeographic map shows Pangaea, the most recent supercontinent on Earth, "disassembling" into modern continents. Map also shows the Interior Seaway that flooded South Dakota in the late Cretaceous Period. Notice that Antarctica and Australia are united in one continent and that India is not yet attached to Eurasia. Stanley and Luczaj, 2014, page 434
**Getting Started:** This course is offered online by using software called Desire 2 Learn (D2L) and may be accessed through the USD student portal [http://my.usd.edu](http://my.usd.edu), or [https://d2l.sdbor.edu](https://d2l.sdbor.edu). Students will not have access to any coursework at the D2L website until the first day of class on **Monday, January 8, 2018**. If you are new to online classes you carefully review the online orientation guide available at [Online Learning Guide](http://my.usd.edu). Use the guide to help determine if your computer and internet connection are adequate before the term starts. Contact the ITS Help Desk for assistance with technical issues.

**Course Materials:** The following materials are available through the [USD Bookstore](http://my.usd.edu) or other vendors. Students are **required** to have all materials when the term starts, wherever you choose to buy them. See the syllabus for more information.


- **Earth System History** online companion materials using Launch Pad Solo via the publisher, see syllabus for complete instructions

- **Laboratory Studies in Earth History, 10th Edition**, by Levin and Smith  

Students also need access to Adobe Acrobat Reader, Microsoft Office Word, and movie players. Links to the download sites for Adobe Acrobat Reader are provided in D2L. The free download for Office 365 ProPlus is available to students with Office 365. More information can also be found on the Office 365 Student Advantage Page in the myU Portal [https://portal.usd.edu/technology/downloads/student/office-365.cfm](https://portal.usd.edu/technology/downloads/student/office-365.cfm)

**Questions:** Email inquiries about the course to [Jeanne.Fromm@usd.edu](mailto:Jeanne.Fromm@usd.edu)

**A Few Links to Historical Geology Internet Resources:**

- **University of California Museum of Paleontology** - The website investigates and promotes the understanding of the history of life and the diversity of the Earth’s biota through research and education.

- **Field Museum of Natural History: Geology Collections** - Online displays of fossils, gems & minerals, and meteorites.

- **Ashfall Fossil Beds** a website about a Nebraska fossil site, Ashfall Fossil Beds State Historical Park, left intact for visitors. Volcanic activity killed animals about 12 million years ago.

- **Evotourism** Smithsonian Museum’s new travel-information services that will help you find and fully enjoy the wonders of evolution from around the globe.