

## Regional Geology of the eastern Rockies/western Plains

### Project Description

Each student will write a summary of the regional geology from the Archean through the Tertiary for the area in western South Dakota to central Wyoming. This should include the formation of the Wyoming craton, the Trans Hudson orogen, cratonic sequences, and any other tectonic events/orogens needed to explain all occurrences of rocks out west. Include the formations we have seen during field camp and the interpretation for the formation of these units.

Pick one rock unit seen during field camp and briefly discuss its economic importance to our society. Briefly discuss the process for the formation of these economic resources and their uses.

### Learning Objectives

This project is intended to benefit students in four general areas: technical communication skills, research skills, writing proficiency, and content knowledge. By the end of this assignment students should:

- Develop and appreciation for the enormity of time and the history of the Earth
- Be able to design and write a quality technical paper
- Be able to conduct independent research using books and journal articles as primary sources of information.
- Interpret your observations of earth materials in a scientifically sound manner
- Be familiar with the formation of earth materials
- Be familiar with the use of earth materials as natural resources for our society.

### Guidelines for the Paper

This paper is to be written as a research paper from any other class. Papers should have 1" margins on all sides, use 10 or 12-point font, and must be no longer than 10 pages of double-spaced text, excluding references. Should the computer lab at SDSMT be difficult to access, hand written papers will be accepted.

All text pages should be consecutively numbered. All figures must be accompanied by a caption and reference if taken from a copyrighted source. Figures may be inserted directly into the text with a figure caption near them, or they may appear with on a separate page inserted immediately after the page on which the figure is first referenced. If figures are inserted on separate pages, these pages need not be numbered. There is no limit on the number of figures you can have in your paper. Consult any of the references in the library for good examples of what reference style to use and how to include references in your text. The field camp library has lots of books and references that will be useful. At the South Dakota School of Mines you will also have access to their library should you so desire.

### Due dates:

- An outline, including references, will be due before you get in the vans June 14<sup>th</sup>. This will be graded as part of the project.
- The final draft will be due June 24<sup>th</sup> before you get your map to draft the final project.

### Grading Policies

The project will be worth 100 points, similar to one of the mapping projects so this project is significant. The paper and presentation will each be graded in each of the four areas listed in the table below.

Outline (15 points)

On time, thorough, shows serious effort towards final product

Paper (100 points)

Organization and Clarity (30 points)

Content and completeness (30 points)

Grammar, writing style, spelling, proper use of the English language (25 points)

Appropriate and correct references (15 points)

### Submitting a Draft of your Paper Early

If you so desire, you may turn your paper in no fewer than five days before the scheduled due date and I will read it and provide feedback to you about how to improve it. I will give you this feedback as notes on your paper, and in a meeting during which we will discuss my comments and suggestions. If you turn your paper in early for a pre-reading, I will grade this early version using the same categories listed above, and the grade you receive on the draft will account for 20% of the final paper grade. The remaining 80% of the paper grade will come from my re-grading of the final paper you submit.

### Assessment Rubric for GEO 395 Research Paper

The paper adequately addressed the ability to make scientific observations and interpret these observations about earth materials

Excellent 4	3	2	Poor 1
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The paper adequately demonstrated familiarity with the formation of earth materials and how they are affected by physical, chemical, and biological activity after they form

Excellent 4	3	2	Poor 1
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The paper adequately demonstrated an appreciation for the enormity of geologic time

Excellent 4	3	2	Poor 1
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The paper adequately demonstrated an understanding of society's dependence of Earth resources and on the interaction between human activities and the natural environment

Excellent 4	3	2	Poor 1
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The paper adequately demonstrated an appropriate written communication skill for a career or advanced study in Geology

Excellent 4	3	2	Poor 1
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### Assessment Rubric for GEO 296 Oral Presentation

#### **Technical Content**

##### ***Stratigraphy***

Excellent 4	3	2	Poor 1
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##### ***Tectonics and Sedimentation***

Excellent 4	3	2	Poor 1
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##### ***Geologic History***

Excellent 4	3	2	Poor 1
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##### ***Economic Significance***

Excellent 4	3	2	Poor 1
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##### ***Overall***

Excellent 4	3	2	Poor 1
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#### **Presentation/Delivery**

##### ***Timing***

Excellent 4	3	2	Poor 1
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##### ***A/V Materials***

Excellent 4	3	2	Poor 1
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##### ***Speech***

Excellent 4	3	2	Poor 1
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##### ***Answering Questions***

Excellent 4	3	2	Poor 1
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##### ***Overall***

Excellent 4	3	2	Poor 1
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