PHYSICAL GEOLOGY & LAB
GEO 103        DOANE COLLEGE-GRAND ISLAND
COURSE OUTLINE & SYLLABUS

INSTRUCTOR: Charles Carpenter  B.S., M.S.  Credit Hours: 4
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FOUNDATIONAL AREA OF KNOWLEDGE: GEO 103 Physical Geology fulfills the
requirement for a Foundational Area of Knowledge in Scientific Perspectives. Any course that
fulfills that requirement will assure that students gain a greater understanding of scientific
thinking and applications using core ideas in courses that include laboratory or field experience.
Students will consider the complexities of scientific methodologies in one ore more disciplines
of the natural sciences, the scientific context of issues they will confront as informed citizens,
and the scientific impact on the global community. Students will work to:
1. Employ methods of science for inquiry in a scientific discipline
2. Develop their scientific literacy and ability to critically evaluate scientific
   information
3. Consider the ethical and social implication of scientific study and use of scientific
   findings.

GEO 103 will seek to accomplish all of these outcomes, with the greatest emphasis on Learning
Outcome #1.

REQUIRED TEXT:
Publisher: W. W. Norton & Company; October, 2011

Other supplemental materials will be supplied by the instructor as required, such as activities
and labs.

COURSE DESCRIPTION:
A study of the earth including earth materials, processes of weathering and erosion, and
processes acting to elevate earth surfaces. Lecture and laboratory. Study includes
oceanography.

LEARNING OUTCOMES: In addition to FAK learning outcomes, learning outcomes
specific to this course are that the students will:
1. Understand that geology is more than rocks, and that it is concerned with explaining
   occurrences, distributions, and relationships.
2. Describe how different types of rocks are formed and distinguish among rocks in every
   roadcut, boring everyone in the car.
3. Understand the Earth’s history and examine why it needs to be safeguarded and
   respected for future generations.
4. Assess the vital role geology plays in closing practical, real-world problems.
5. Compare some of the major constructive and destructive forces at work on the Earth.
6. Describe the geologic processes that have gone on around them.

**LEARNING STRATEGIES:** This course will use lecture, guest speaker(s), video, discussion, activities and lab exercises. Attending classes is imperative, as the activities and lab exercises will be intertwined with discussion and work from the book. Because of the blend of material, missing class will put you at a disadvantage. Being able to work with your partner(s) is a must.

This course will start with a discussion of space, working towards the core of the Earth. Topics will include: origin of the solar system, Earth (including the origin of minerals and rocks), layers of the Earth, types of rocks that make up the layers, how each type of rock is formed, interpreting rock history by analyzing cross sections of the Earth’s crust. A brief study of the origins of oceans and the mineral wealth they possess will also be included.

Lab activities include:
- identification of the major rock forming minerals
- identification of the major types of igneous, sedimentary, and metamorphic rock
- interpretation and analysis of geologic cross sections
- analysis of rock particles to determine origin and distance of travel
- analysis of the pros and cons of each of the major theories of the origin of the solar system (this may involve computer work)

**ASSESSMENT OF STUDENT PERFORMANCE AND COURSE REQUIREMENTS:**
1. **Class Participation/Attendance (each night of class = 100 pts.).** Your grade for this component is determined by the number of times that you are present in class and your contributions during class work and discussion. If emergencies arise, and you contact the instructor PRIOR to class, that will be factored into the total points. No notification will result in a loss of 100 points for that night. Late notification will result in a deduction of 25 points for that evening. The only exception would be an extreme medical emergency.
2. **Project/Paper (worth 100 points).** This will be divided into daily work, and a paper dealing with some area of geologic interest, whether in Nebraska or somewhere in the U.S.
3. **Team Tests (worth 100 points each).** These tests will center around some type of lab exercise (such as mineral and rock identification using test kits). You will work on these tests with a partner.
4. **Individual Tests (worth 100 points each).** These tests will be completed individually and will be over the areas of study.

**COURSE POLICIES:**
1. Grading Policies--The following grading scale will be used:

   90-100 = A  
   80-89 = B  
   70-79 = C  
   60-69 = D  
   BELOW 60 = F
2. Late papers/assignments--all assignments are due at the time the instructor has scheduled. All work needs to be done by the end of the class eight week session unless other arrangements are made.

3. Attendance--A portion of your grade will be based on attendance. If you must miss a class, as a matter of courtesy, let the instructor know. See above for further information. You will be expected to complete all work, gather notes, and complete all course work.

4. Academic Integrity Policy--
The Doane College Academic Integrity Policy will be adhered to in this class. All projects and tests will represent your own work or the work of the group. Any use of others’ ideas and words without proper citation of sources is plagiarism and will result in penalties to be determined by the instructor and/or the dean of undergraduate studies.