GEO 103
PHYSICAL GEOLOGY & LAB
DOANE COLLEGE-GRAND ISLAND

SYLLABUS

Course Number: GEO 103
Credit Hours: 4
Instructor: Charles Carpenter  B.S., M.S.
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Materials Required:
“Earth: Portrait of a Planet” by Stephen Marshak, 3rd Edition
Publisher: W. W. Norton & Company; October, 2007
ISBN-10: 039393036X
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. Study includes oceanography. Lecture and laboratory class. This class is required for the Liberal Arts major, and can serve as a general education requirement or as a general elective or the other majors.

The course will be divided into six parts.
1. We will look at ourselves as an island in space.
2. We will look at the Earth’s materials.
3. We will look at the tectonic activity of our dynamic planet.
4. We will discuss a brief biography of Earth with a close-up of Nebraska.
5. We will look at the Earth’s resources.
6. We will discuss the processes and problems at the Earth’s surface.
If you do not care about rocks and you believe that all of the oil has been found, then this course will surprise you, because geology is so much more!

Course Objectives:
The student will be able to:
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.

Course Outline
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 makeup 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:

a. identification of the major rock forming minerals
b. identification of the major types of igneous, sedimentary, and metamorphic rock
c. interpretation and analysis of geologic cross sections
d. analysis of rock particles to determine origin and distance of travel
e. analysis of the pros and cons of each of the major theories of the origin of the solar system (this may involve computer work)

Guest speaker will be Robert Diffendal, a geologist and professor emeritus in the School of Natural Resources at the University of Nebraska-Lincoln.

Course Requirements/Grading:

1. **Class Participation/Attendance (worth 20% of the course grade).** This is determined by the number of times you are present in class and by your contributions during lab work and discussion. Attending classes is imperative. Labs will be interwoven into the matrix of lecture and discussion. A portion of your grade will be based on attendance in the form of participation points. If you miss a class, you are expected to complete all work, gather notes, and complete labs.

2. **Projects/Papers (worth 20% of the course grade).** 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 30% of the course grade).** 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 30% of the course grade).** These tests will be completed without any outside assistance and will be over the areas of study.

Grading scale: 90-100=A, 80-89=B, 70-79=C, 60-69=D, below 60=F

Late papers/assignments will be accepted as long as they are received by the instructor prior to the next class time.

**Doane College 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. 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.