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GEOLOGY 103--PHYSICAL GEOLOGY ONLINE (4 Credits)

COURSE SYLLABUS

Fall Term, 2014—Lincoln Campus

INSTRUCTOR: Dick Ehrman

PHONE: Cell: 429-1327 (if no answer leave a voicemail).

E-MAIL: richard.ehrman@doane.edu (Note: I may not check my e-mail every day, so if your e-mail is particularly important, it may be a good idea to contact me by phone as well.)

NOTE: As per Doane policy, you MUST submit ALL coursework for a grade in online courses via your Doane email account or through Blackboard. Since much of the communication in this class will take place via email, please make sure that your Doane account is activated and functioning before beginning this class.

MEETING TIME: ONLINE CLASS; no regular class meetings.

INITIAL ORGANIZATIONAL MEETING: Tuesday, August 19, 2014 from 6:00 to about 9:00 PM. If students and/or the class as a whole desire, we can schedule more “formal” class meetings either on assigned weeknights or Saturday mornings. The Fall term runs from August 18-October 18, 2014.

“OFFICE”: Of course, I don’t have an assigned office space, but if you need to see me in person, I am normally at Doane-Lincoln on scheduled class evenings (usually Tuesday) by about 4:30 PM in either Room 305 or 303, and I normally have lab or am working on Saturday mornings from 8:30 AM to about noon, again usually in Room 305 or 303. Feel free to stop by and visit me at either of these times, otherwise, specific appointments can be scheduled.

TEXTS:


Additional text (provided): Korus, J.T et al. 2013. The Groundwater Atlas of Nebraska (Resource Atlas RA-4b). 64 p. (This is referred to as GWAN in your reading assignments; it's provided with your lab map packet which you will pick up at the first class meeting.)

Additional text (not required but made available via Blackboard): Murck, B.W. 2001. Geology: A Self-Teaching Guide. New York: John Wiley & Sons. 328 p. ISBN: 0-471-38590-5. IMPORTANT NOTE: This text is out of print, but it is available as a PDF file at NO COST to you! You will be given instructions on accessing it on Blackboard at the initial class meeting.
WEBSITES: In addition to the resources listed above, the internet is a nearly endless source of geological information about almost any subject. Simply go to your favorite search engine and type in "geology" or whatever topic you’re interested in and you’ll come up with dozens of sites to explore. Your assignments will include links to a lot of great websites, but here are some of my favorite general geology sites to get you started:

Earth Science on the Web: www.geology.com
About Geology: http://geology.about.com

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.

Geology 103 fulfills a requirement for the Scientific Perspectives Foundational Area of Knowledge (FAK). Courses in this FAK will allow Doane students to 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 or 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 achieve the following learning outcomes:
1. Employ methods of science for inquiry in a scientific discipline;
2. Develop their scientific literacy and ability to critically evaluate scientific information; and
3. Consider the ethical and social implications of scientific study and use of scientific findings.

COURSE OBJECTIVES: In addition to the FAK outcomes described above, this course will achieve a number of specific objectives relating to modern geology. A student who earns a passing grade in this course should be able to:

1. understand the scientific method and its applications to geology, other sciences, and life in general;
2. understand the difference between minerals and rocks and how each contributes to the solid framework of the earth;
3. discuss the major properties of minerals and use simple laboratory tests to demonstrate these properties so as to identify common rock-forming minerals;
4. differentiate between the three main types of rocks and use simple laboratory tests to identify common rocks;
5. understand and describe the most important surficial processes shaping the earth (e.g. weathering, stream action, wind, glaciers, ground water, etc.)
6. understand the most important aspects of the earth's interior structure;
7. relate the critical nature of plate tectonic theory as a unifying theory capable of explaining many observed geologic phenomena;
8. describe the most important features of Nebraska's geology;

9. more confidently discuss, consider, and evaluate scientific ideas; and

10. utilize her/his basic knowledge of geology to live a more fulfilling and effective life as an individual, parent, employer/employee, and citizen.

**PREREQUISITES:** An interest in learning more about the world and how it has developed over time. In addition, since this course is mostly online (except for an organizational class meeting and two in-person lab exams), you MUST have or have access the following:

1. A computer equipped with Microsoft Word word processing software
2. An internet connection (since much of the class involves visiting graphics-intensive websites, a fairly fast connection (e.g. DSL, cable, etc.) rather than dial-up is recommended)
3. An email account

Much of the course work and discussion will be performed via emails between you and me. Due to recent changes in Doane’s policy, I can ONLY accept work submitted from your Doane email account. So, please make sure your Doane email account is activated and functioning before beginning this class. In addition, common course resources (course documents, PowerPoint presentations, some assignments, etc.) will be posted on Doane’s Blackboard website. If you are not familiar with using Blackboard, instructions will be provided to you at the organizational class meeting.

**CLASS SCHEDULE**

As already specified, this is an online class and as such there is no “schedule” per se w/ lectures, class meetings, in-class tests, etc. However, I will provide you with assignments on pertinent topics that you can complete on a more-or-less weekly basis throughout the term. An approximate schedule follows—it is provided more as a guide so you can keep up with your text reading and online work than anything else. You can vary your schedule at your own discretion, but just remember that all “weekly” Assignments 1-10 and the short essay exam are due on the specified dates if you wish to have me give you feedback; your remaining work (lab exams, multiple choice exam) is due by the end of the term (i.e. Saturday of Week 9).

**REMEMBER:** There are FOUR (4) required activities for this class:

1. The ten (10) weekly assignments;
2. The short essay exam;
3. The multiple choice exam; and
3. The four (4) lab exams.

I will provide all assignments and instructions via email within one day of the organizational meeting. The assignments, instructions, and PDFs of the ancillary texts will also be posted on Doane's Blackboard site; instructions for accessing this material will be provided at the organizational meeting.

You may also do extra credit work as outlined in the course description, which will be provided to you at the organizational meeting. ALL COURSEWORK (the 4 required activities and any extra credit work) is due by the end of the term. IF YOU DO NOT TURN IN ALL REQUIRED WORK BY THE END OF THE TERM, YOU WILL ONLY RECEIVE THE POINTS EARNED ON THOSE ASSIGNMENTS TURNED IN.
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**SCHEDULE** (suggested; you can complete your assignments at your own pace)

<table>
<thead>
<tr>
<th>Date (End of Week)</th>
<th>Topics</th>
<th>Readings</th>
</tr>
</thead>
</table>
| Week 1 (Aug. 23)   | Introduction; Scientific Method  
Assignment 1  
Begin Lab #1—Minerals | Ch. 1, 2  
Lab #1 |
| Week 2 (Aug. 30)   | History of Geology  
Assignment 2  
Elements & Minerals | Ch. 3  
Ch. 5, 6 |
| Assignment 3  
Finish Lab #1—Minerals | Lab #1  
Lab Exam 1—Minerals |
| Week 3 (Sept. 6)   | Rocks  
Assignment 4  
Begin Lab #2—Rocks | Ch. 7 |
| Week 4 (Sept. 13)  | Plate Tectonics  
Assignment 5  
Finish Lab #2—Rocks  
Lab Exam 2—Rocks | Ch. 8, 9, 10  
(NOtte: Lab Exam 2 covers all three rock types, so you should coordinate this lab with your studies in Weeks 3-4.) |
| ASSIGNMENTS 1-5 DUE FOR COMMENT! |
| Week 5 (Sept. 20)  | Mass Wasting  
Water  
Assignment 6  
Assignment 7 | Ch. 11  
Ch. 12, 15 |
| Week 6 (Sept. 27)  | Glaciers  
Assignment 8  
Lab #3—Topographic Maps  
Lab Exam 3—Topographic Maps | Ch. 13 |
| Week 7 (Oct. 4)    | Wind  
Assignment 9  
Nebraska Geology/Ground Water  
Assignment 10  
Lab #4—Geologic Maps  
Lab Exam 4—Geologic Maps | Ch. 14  
GWAN  
Lab Exam 4—Geologic Maps |
| ASSIGNMENTS 6-10 DUE FOR COMMENT!  
SHORT ESSAY EXAM DUE FOR COMMENT! |
| Weeks 8-9 (Oct. 11-18) | Revise assignments  
Complete lab assignments/exams (if not already done) |
Complete multiple choice exam
Course evaluation
LAB EXAMS, MULTIPLE CHOICE EXAM, AND ALL REMAINING WORK DUE NO LATER THAN THE END OF WEEK 9!!!
*REMEMBER* that you need to turn in all 4 required activities (the 10 weekly assignments, the short essay exam, multiple choice exam, AND the 4 lab exams) AS WELL AS YOUR LAB MATERIALS!!!

GRADES: You will earn your grade in this class by completing the following activities: specific online assignments/exercises, a short essay exam, lab exercises, and a term paper or project. NOTE THAT ALL FOUR ACTIVITIES ARE REQUIRED FOR THIS CLASS.

REQUIREMENT #1: Online assignments/“weekly” exercises (100 pts. total): These are the basic, “day-to-day” exercises which will illustrate some of the fundamental concepts and activities which make up modern geology. Typically, these will involve visiting a website(s), reading an article(s) or the textbook, or some similar action, and based upon that action, you will answer a series of short questions (i.e. each involving a few sentences or paragraphs) about that activity. These assignments will be due to me by the dates indicated on the course schedule. If you submit those assignments by the date indicated, I will provide feedback on your answers, and if you so desire, you can then revise your answers to improve your grade. In order to be eligible for revision, you MUST attempt to complete AT LEAST 50% of a given assignment, and that completion must be a valid attempt at correctly answering that material. If you do not submit those assignments by the date indicated, you will still get credit for your work, but you will not have the opportunity to revise your answers and you will not receive any detailed feedback; i.e. your first grade on those assignments will be your final grade. IF YOU DO NOT SUBMIT THE ASSIGNMENTS BY THE FINAL DAY OF THE TERM, YOU WILL LOSE THE POINTS ASSOCIATED WITH THOSE ASSIGNMENTS.

REQUIREMENT #2: Short essay exam (100 pts. total): The exam is a series of short essay questions designed to give you an opportunity to research and write in a little more depth on several important topics. This exam will be made available early in the term so you’ll have plenty of time to work on it. Although there is no specific requirement for length, most of these questions are designed to be answered in a few paragraphs to a few pages each. This exam is due by the date indicated on the course schedule (Week 7). If you submit your exam by Week 7, I will provide feedback on your answers, and if you so desire, you can then revise your answers to improve your grade. In order to be eligible for revision, you MUST attempt to complete AT LEAST 50% of the exam, and that completion must be a valid attempt at correctly answering that material. If you do not submit the exam by the date indicated, you will still get credit for your work, but you will not have the opportunity to revise your answers and you will not receive any detailed feedback; i.e. your first grade on the exam will be your final grade. IF YOU DO NOT SUBMIT THE EXAM BY THE FINAL DAY OF THE TERM, YOU WILL LOSE THE POINTS ASSOCIATED WITH THAT EXAM.

REQUIREMENT #3: Multiple choice exam (50 pts. total): This is a traditional multiple choice exam. Simply complete the exam by checking the boxes for the correct answer for each question, save the exam to your computer, and submit it to me. This exam is due by the end of the semester. Also, there are no revisions allowed for this exam, so make sure your answers are correct before you submit it! IF YOU DO NOT SUBMIT YOUR MULTIPLE CHOICE EXAM BY THE FINAL DAY OF THE TERM YOU WILL LOSE THE POINTS ASSOCIATED WITH THAT EXAM.

REQUIREMENT #4: Lab exercises/tests (50 pts. total): These are typical lab exercises, and consist of activities involving minerals, rocks, topographic maps, and geologic maps. Once you’ve completed the lab activities, each topic has a short lab exam that you must complete. You must complete the lab exams by the end of the term. Also, there are no revisions allowed on your lab work, so make them good the
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First time! IF YOU DO NOT COMPLETE YOUR LAB WORK BY THE FINAL DAY OF THE TERM YOU WILL LOSE THE POINTS ASSOCIATED WITH THOSE ITEMS.

All of these activities will typically be submitted to me electronically. In the case of the weekly assignments, essay exam, multiple choice exam, and the lab exams, just download the appropriate file(s) and fill in your answers in the space provided. If possible, please provide your answers in a different color or font so it’s easy for me to see your answers. Then, just save your assignment in a MS Word file, and email it to me when you’re done. I will normally view and grade the activity online, but may print out the activity if necessary, and will let you know via email what your grade is for that activity. For those assignments that are submitted on time (that is, the weekly assignments and short essay exam), I will provide feedback/suggestions via email, and you will have the opportunity to revise your answers for a better grade.

I will make every attempt to respond to any student's email submittals, questions, or requests for more information within one week of receiving an email. However, my regular job sometimes puts me in places where I may not have email access. That being the case, if you send me an email and I have not responded to you in your desired timeframe and you need an answer or feedback, please contact me on my cell phone (402-429-1327) and I’ll be happy to assist you.

The online assignments, short essay exam, multiple choice exam, and lab exams will be worth the points indicated above. The total number of points available on the online assignments, short essay exam, multiple choice exam, and lab exams will be 300; your final grade will be calculated against that 300 pt. total as outlined below.

**GRADE SCALE:** Grades will be assigned on a simple point accumulation basis. There are 300 points possible on the three required activities (assignments, exam, paper/project); your grade will be determined relative to those 300 points based upon the following scale:

<table>
<thead>
<tr>
<th>POINTS</th>
<th>GRADE</th>
</tr>
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<tbody>
<tr>
<td>290 &amp; above</td>
<td>A+</td>
</tr>
<tr>
<td>280-289</td>
<td>A</td>
</tr>
<tr>
<td>270-279</td>
<td>A-</td>
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<td>260-269</td>
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<td>190-199</td>
<td>D</td>
</tr>
<tr>
<td>180-189</td>
<td>D-</td>
</tr>
<tr>
<td>179 &amp; below</td>
<td>See you next term</td>
</tr>
</tbody>
</table>

**EXTRA CREDIT:** In addition to the required work described above, you may do extra credit work if you so desire. There are several categories you can choose from:

1. **Short Research Paper:** Papers can be on ANY subject, book, or article pertinent to this class, as long as the subject is cleared with me first. They should be typewritten or neatly handwritten, and should be about 5 pages with references. Any standard format is acceptable.
2. **Book/Article Review:** You may review a book or scientific article on a topic that is pertinent to this class. There are a multitude of such works, but anything that relates to geology is okay. The length will vary with the type of review you do, but generally a few pages is adequate, again typewritten or neatly handwritten.
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3. Site Visit: You can also make a visit to any geologically-oriented location (e.g. Morrill Hall on the UNL campus, Schramm Park, Pioneers Park, etc.) and write up a short report of your visit there, emphasizing the displays or portions which deal with geology, paleontology, etc.

4. Website Reviews: Geology (like most sciences), is fast becoming an Internet-based endeavor. So, for this class, you can visit a related website (OTHER than the ones required in your online assignments), and write a short synopsis/critique of the site (what it was about, what you liked/disliked, why, etc.). Again, length will vary, but generally 2-5 pages (you may also download pages, pictures, etc.) is okay.

Each of these activities is worth 5 pts. toward your final grade, and you may pick any combination of up to 4 different items. Thus, the total possible extra credit you can earn in this class is 20 POINTS!!!! Your extra credit work will be due to me by the end of the term.

FINAL GRADES: Final grades will be assigned after final due date for all work (the end of the term). Normally, I’ll grade your assignments as I get them, then let you know via email what your grade was for that particular activity. Assignments, exams, or papers/projects received at the end of term will be graded by the grade submission due date established by Doane for each term. ALL ELECTRONIC SUBMITTALS OF ASSIGNMENTS, EXAMS, OR PAPERS/PROJECTS WILL BE DELETED NO EARLIER THAN 24 DAYS AFTER THE END OF A TERM. HARDCOPY VERSIONS OF THE SAME WILL BE DESTROYED AT THE SAME TIME UNLESS THE STUDENT REQUESTS THEIR RETURN.

SUBMITTAL OF WORK: As described above, your work will be submitted via email, usually in the form of attachments. However PLEASE MAKE SURE THAT ANY ELECTRONIC SUBMITTALS ARE IN MICROSOFT WORD FORMAT (.doc or .docx) or PDF. I have considerable difficulty converting some other forms of submittals (especially .wps files), so please submit your work in standard Microsoft format. Also, please remember that any electronic submittals MUST come from your Doane email account; I CANNOT ACCEPT ANY ELECTRONIC SUBMITTALS FROM ANY OTHER EMAIL ACCOUNT AND WILL RETURN IT TO YOU UNGRADED.

LAB MATERIALS: This is a 4-credit lab course, and therefore you will be required to perform certain basic lab activities. At the organizational meeting (or at an arranged time), you will be issued the following lab materials:

- A set of 22 mineral specimens & 10 test specimens (green box labeled “MINERALS”)
- A set of 24 rock specimens & 10 test specimens (green box labeled “ROCKS”)
- A mineral & rock identification kit (plastic container) containing:
  - 1 glass scratch plate
  - 2 porcelain streak plates (1 white and 1 black)
  - 1 small magnet
  - 1 nail
  - 1 magnifying glass
  - 1 plastic squeeze bottle containing diluted hydrochloric acid
- A set of topographic maps, containing one standard USGS 7.5 minute topographic quadrangle for the following areas in Nebraska:
  - Lincoln
  - Chadron NE
  - Overton
  - Burwell
  - Rulo
- 2 geologic maps (individual manila envelopes containing 1 X 2 degree bedrock maps) for the following areas in Nebraska:
  - Grand Island
  - Lincoln/Nebraska City
- NOTE: The topographic maps and geologic maps are provided in the large padded manila envelope labeled “Topographic and Geologic Maps.”
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The mineral and rock sets and the identification kit are meant for at-home study. In addition, I have larger, more complete sets of minerals and rocks in the geology lab in Room 305 at Doane. These larger collections will be available for your study on Saturday mornings, at arranged meeting times, and/or any other time when Room 305 is not otherwise occupied.

In order for you to receive credit for this class, **ALL LAB MATERIALS MUST BE RETURNED IN GOOD ORDER AND CONDITION. IF YOU FAIL TO RETURN YOUR LAB MATERIALS, YOU WILL BE ASSESSED AN ADDITIONAL $100 FEE!!!!** I don’t require this because the lab stuff is all that valuable, but more because I need the lab materials for upcoming classes. In other words, if you don’t turn your lab materials in, future students won’t have them available for study. So please arrange to get the lab stuff back to me as soon as you’re done with them!!! Also, these lab materials are meant for lots of hands-on work, but please use common sense and take care of them; if they are taken care of I don’t have to replace them so often and therefore your lab fees can remain reasonable. Also, please note that these materials are meant for the use of adult Doane-Lincoln students only; **PLEASE OBSERVE ALL SAFETY STATEMENTS AND KEEP THE LAB MATERIALS OUT OF REACH OF CHILDREN.**

**ACADEMIC INTEGRITY POLICY:** In keeping with the mission of Doane-Lincoln in particular and higher education in general, 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 a loss of all points for that particular assignment or test. You are allowed and encouraged to collaborate with other students as you work through this class, but **MAKE SURE THAT ALL WORK IS SUBMITTED IN YOUR OWN WORDS AND CONSTITUTES YOUR OWN WORK. I WILL UTILIZE A VARIETY OF PLAGIARISM DETECTION SOFTWARE THROUGHOUT THIS CLASS; IF YOUR WORK IS SUBSTANTIALLY PLAGIARIZED YOUR WORK WILL EITHER BE RETURNED OR YOU WILL RECEIVE A GRADE OF ZERO AT MY DISCRETION.**

**READINGS AND NOTES:** I’ve provided you with a set of course notes which give you an outline of the topics that I consider to be most important for a beginning student of geology. The text readings are intended as supplementary to these notes. In addition, my course lectures (from the in-class version of this class) in the form of PowerPoint presentations will be posted on the Blackboard system so you can download them if you wish. Between the text, other printed resources, and especially the internet, there is an ENORMOUS amount of information available on geological topics which makes it pretty easy to get lost or overwhelmed. So, I want to make sure that you have a good idea of what I think is important (and what topics you’re likely to be evaluated on). You’ll also notice that the text I use is a lot more informal than many texts you’re used to. This being the case, we’ll cover some stuff that’s not covered in depth or at all in the text. Thus, it’s important that you read the material that I assign, but particularly so as it relates to the stuff that is in the notes. So please feel free to use any other source of information that works for you; but remember that the course notes represent a kind of common baseline of the things that I hope you remember when you finish this class (and the things that will show up on exams or exercises). So, making judicious use of all the sources of information you can get your hands on will help you learn more about geology.

**INCOMPLETES:** As you might be aware, Doane has a new policy on incomPLETES. Please keep this in mind as you do your classwork; the policy is as follows:

An Incomplete (I) may be given if a student is not able to complete the work required for a course by the last day of the course due to sickness or other extenuating circumstance that the student has discussed with the instructor. Of the course due to sickness or other extenuating circumstance that the student has discussed with the instructor. When awarding an incomplete, the instructor will assign an expiration date NO LATER THAN the last day of the next term. If the expiration date passes without a grade change from the instructor, the incomplete grade will automatically convert to an “F”. This is a final grade and will not be changed, per the grade change policy.
In order to receive an incomplete (I), a student must have completed at least 75% of the coursework required for the course. If a student wishes to receive an incomplete for a course, the student will obtain a form from the registrar that will allow the teacher and the student to detail the coursework required to remove the incomplete. The student must complete the form, obtain the signature of the instructor on the form, and return it to the Registrar’s office.

QUESTIONS: Heartily encouraged at all times and about any subject you’re having trouble with. Remember, in this class, **THERE IS NO SUCH THING AS A DUMB QUESTION!!!!** You may get some rather absurd answers from time to time, but don’t let that stop you. In an online setting, it’s sometimes easy to get confused or lost, so don’t let that happen. Send me an email, give me a call, or set up an in-person meeting and I’ll help you out. That’s not an inconvenience—it’s what you’re paying me for!

So, with all these pleasant thoughts in mind, relax, sit back, and enjoy a little geology. The most important thing to remember is **DON’T WORRY!!!!** Worrying about your grade, class status, image, etc. spoils more learning opportunities than just about anything else. With a little bit of work and thought, you’ll pass this