

GEOL 101 (SECT 01; CRN 20254): EARTH PROCESSES, RESOURCES, AND THE ENVIRONMENT

DEPARTMENT OF PHYSICAL SCIENCES, CONCORD UNIVERSITY, SPRING 2019

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Required Text:

- Merritts, D., Menking, K., and De Wet, A., 2014, *Environmental Geology – An Earth Systems Science Approach, 2nd ed.*
- Other readings for the course will be posted on Moodle.

Catalog Description: Study of Earth systems and the geologic link between people and the environment. Emphasizes interactions among the lithosphere, biosphere, hydrosphere, and atmosphere. Topics include common minerals and rocks, plate tectonics, geologic hazards, water pollution, natural resources, and global environmental change. A General Studies Lab Science course. Three hours lecture, two hours lab or field. Prerequisites: None. Four semester hours credit.

Expectations: Ability to regularly attend class, take detailed notes, read and study a college-level textbook, and complete college-level laboratory work and homework assignments. “Eighty percent of success is showing up” – Woody Allen

Semester Schedule:

Week	Reading	Topics
Jan 14	Ch 12(431-436) Ch 1	Meet the Earth -Some recent natural disasters -Earth systems and feedback
Jan 21	Ch 2	Plate tectonics
Jan 28	Ch 2	Plate tectonics
Feb 4	Ch 3	Faults, earthquakes, and buildings that kill people
Feb 11	Ch 4	Exam 1 (Monday) Earth materials – Minerals and rocks
Feb 18	Ch 4	Earth materials, continued
Feb 25	Ch 4	Mineral resources – Origin, environmental impacts, economics
Mar 4	Ch 5	Breath pipes and ignivomous mountains
Mar 11		Spring Break
Mar 18	Ch 6	Geologic time and age of the Earth Exam 2 (Friday)
Mar 25	Ch 9	Surface water – Rivers, floods, wetlands, and resource protection
Apr 1	Ch 10	Groundwater resources and environmental regulations
Apr 8	Ch 11 (1 st sect.) Ch 12	Evolution of the atmosphere and oceans through time Oceans, seawater chemistry, and sea level change
Apr 15	Ch 13	Geologic origin of energy resources
Apr 22	Ch 13(495-516)	Exam 3 (Monday) Alternative energy and geology
Apr 29	Ch 14-15	Climate change from a deep time perspective Impacts of climate change and resource use on society
May 10		Comprehensive FINAL EXAM 11:30-1:45

Rationale and Purpose of this Course: Some the biggest issues that will affect us this century are related to the availability of natural resources and the condition of Earth's environment. As population grows, non-renewable resources are depleted and important parts of the natural environment are altered, so resources, the environment, and human development seem to be at odds with one another. To evaluate these issues, it is important to understand how the Earth works, since it is the source of all resources. This course is an introduction to Earth for science and non-science majors. The course examines the Earth as an integrated system focusing on connections between natural processes and different branches of science.

Content Goals and Themes for the Semester:

1. Develop and demonstrate an interdisciplinary understanding of the nature of science and scientific reasoning
2. Use and demonstrate an Earth systems approach to examine the solid Earth and how it relates to air, water, and life
3. Introduce and explain technological, societal, and environmental issues related to natural resources and natural hazards
4. Use critical analysis skills to investigate the nature of scientific inquiry and apply them in new situations
5. Demonstrate an introductory proficiency of lab- and field-based skills related to geologic observation and description.

Instruction: This is an active learning class. Instruction will include short lectures extensively supplemented by discussions, case studies, and miscellaneous learning activities and quizzes (LAQ's) that require analysis of problems. Some LAQ's will be homework assignments, including problem sets and exercises requiring access to the internet (e.g., use of Google Earth), and many will be completed in class. Lab work emphasizes observation, description, and deduction. College-level writing, group interaction, collaboration, map reading, and the use of simple mathematics is required throughout the course.

Hybrid Online Sessions: Several class sessions will be offered online (including snow days and days I am travelling off campus for research or other work). This typically involves viewing video content online, reading selections from your textbook or other media, and completing a learning activity related to the content on your own. The material may be the subject of follow-up quizzes. You should expect to spend up to 2-3 hours finishing the online content; this is the equivalent of spending one hour in class and 1-2 hours out of class studying the material for that particular day.

Assessment: Final course grades will be weighted as follows:

Lab (equal weight per lab; lowest grade dropped)	25%
Learning activities and quizzes (LAQ's) (lowest 3 grades dropped)	25%
Periodic exams (3 @ 10 % each; Final exam can replace lowest if it is higher)	30%
Final Exam (comprehensive)	<u>20%</u>
	100%

Your final course grade will be determined by your total average score at the end of the course:

A	90-100%	Indicates superior performance and thorough understanding of class material
B	80-89%	Indicates good performance and above average understanding of class material
C	70-79%	Indicates average performance and an adequate understanding of class material
D	60-69%	Indicates below average performance or incomplete understanding of class material
F	<60%	Inadequate performance

Learning Activities and Quizzes (LAQ's): Numerous short, in-class exercises, quizzes, and/or homework problems will occur throughout the semester (generally 1 to 3 per week). If you are absent for an in-class exercise or quiz (whether excused or unexcused), then you will receive a zero for the assignment (no make-up options available). Please note, however, that the lowest 3 grades in this category are dropped to account for absences, whether excused or unexcused. Short quizzes are normally announced during the prior class period or email. It is your responsibility to keep track of them.

Basic Grading Rubric: Most LAQ's and lab reports are graded on a 5-point scale. The scale below shows my expectations. Half points may be awarded for work that falls between.

5/5 More effort than required to simply complete the assignment; 0-1 grammatical or spelling errors; work is neat and professional; computations correct if calculations are necessary; work is easy to follow; clear understanding of main purpose of exercise; insightful or in-depth commentary or analysis.

4/5 Sufficient effort to complete the assignment; no more than 2-3 grammatical/spelling errors; work is neat and professional; computations nearly all correct if calculations are necessary; work is easy to follow; clearly understands the main point; shows some insight and effort beyond average.

3/5 Just enough effort to complete the assignment; 4-5 grammatical/spelling errors; neatness and professionalism of work can be improved; computations are somewhat correct if calculations are necessary; work is difficult to follow; appears to have understood some of the main point; most >3 day late submissions.

<3/5 Incomplete; more than 5 grammatical/spelling errors; work is sloppy or unprofessional or rushed.

Late Lab and Late Assignment Submissions: Although I do accept late work, I will not be able to grade it in detail and may not give more than 70% on it if more than a couple days late. However, I usually cannot accept late work after it is returned to the rest of the class. Internet outages will not be accepted as an excuse for late work. Plan ahead. Note that I drop the lowest lab grade and the lowest three LAQ grades (!). This is to accommodate sick days – No questions asked.

Lecture Periods: Weekly textbook reading assignments should be read at the beginning of each week or before each week begins to maximize learning during each class or lab period. If you find yourself lost or confused, it is probably because you are behind in your reading. If this is not the case, please make an appointment to see me as soon as possible for study suggestions and help finding a tutor. I regularly offer study skills suggestions in class and at least one out of class workshop. I want you to succeed in college. Class sessions will not necessarily follow everything in the textbook. The textbook is a supplement to lectures and is not a substitute for a good set of class notes.

Study Skills and How to Succeed: It is impossible to learn geology by reading the book the night before each exam because there is too much specialized vocabulary. It is recommended that you follow a regular study and reading schedule to keep up with the material. To help accomplish this, I have included an 8-day exam preparation guide in the General Resources section of Moodle.

Further tips for success: As a general guideline, you should be completing 2-3 hours of homework and reading for each hour of instruction in class. I suggest working the end-chapter review questions in your text as ungraded homework. There is a list of key terms that you should be prepared to define, a list of review questions to answer, and some additional thought questions. Some of these show up on your exams and you will practice them in some of the LAQ's. You must have a good knowledge of specialized geologic terms to understand, solve, and answer exam questions.

How to get a D or an F in this class: I have been teaching for quite a while at four different universities, and I now know exactly how students can successfully achieve those grades. If you are interested in getting a D or F, do any of these things: (1) Routinely miss class, (2) fail to buy/rent and/or read the textbook, (3) skim the textbook and study only on the night before the exams, (4) fail to take any notes in class and don't bother to look at the slide presentations on Moodle in a timely fashion, (5) frequently miss labs, and/or (6) fail to do your own labs and homework and just pick up the answers from someone else. Works every time.

CU Educational Goals and Mission (*Notice – this section is NOT something students need to know*): The mission of Concord University is to provide a quality, liberal-arts-based education, to foster scholarly and creative activities, and to serve the regional community. The educational programs of Concord University are designed to foster skills, knowledge, and attitudes. As a general education course, Geol 101 directly addresses and assesses the following three educational goals: Skills (1.2), An ability to employ observational, logical, analytical, and critical thinking skills to problem solving; Knowledge (2.2), An awareness of the fundamental characteristics and properties of the physical universe; Knowledge (2.3), An ability to interpret events and trends within historical contexts. The course also addresses aspects of other educational goals, including 1.4, 1.5, 1.6, 1.7, 2.5, 3.1, and 3.7.

Other Course Expectations and Policies (the fine print):

•**Email:** You are encouraged to contact me through email. However, please include GEOL 101 as part of the subject line so that I don't miss the message. Please write your questions using complete sentences. I may return email that is incomplete or unprofessional and request a writing revision.

•**Attendance:** Attendance is required, although I don't take roll and don't ask for excuses. I really don't recommend skipping class, as some of the only people to have failed my class did so through routine absence. For additional information, see the Concord University catalog concerning attendance policies. If you have been absent for more than 1 week without contacting me, I may withdraw you from the course.

•**Special Lab and Exam Attendance Policy:** You must be present for each exam or lab. Make-up exams are discouraged and will be considered for approval only with appropriate pre-notification. Approved make-up exams will be different than the original and must be completed within 48 hours of the originally scheduled exam. Make-up exams will only be considered in the case of a written medical emergency or a University activity that I have *pre*-approved. Most labs require materials and instruction that will only be present only during scheduled lab hours. Therefore, labs cannot be made up at a later date although you might be able to pre-arrange attending a different lab section in my course. Your lowest lab grade is dropped from your final grade calculation; therefore, if you are ill or absolutely must miss one lab week, the zero would be dropped from your final grade calculation.

•**Field Trips:** Participation in off-campus field trips during some lab sessions requires signing a waiver of liability. If you do not participate, you will not be able to receive credit for lab work based upon a field trip. Make-ups are not possible.

•**Textbook:** All students MUST own, borrow, or have rented a copy of the textbook for the semester and have it available in class.

•**Internet Requirements and Moodle site:** I will be using Moodle to offer lecture slides, notes, assignments, and anything else I find interesting. Your MyCU login will grant you access to the site. As a general rule, you should check Moodle every day, even if not announced specifically in class to see if there are any updates (I usually communicate them through the Moodle Forum).

•**Inclement Weather:** If campus is closed due to weather, it does **not** mean that classwork is cancelled. I will use Moodle to communicate during weather closures and assign make-up work if the University is closed. You will be given an online assignment to complete for credit if class is cancelled. If an inclement weather schedule is announced, see <http://www.concord.edu/emergency-alerts> for Athens/Beckley delayed start times. When on the inclement weather schedule, labs will start at the published inclement start time and it will last for 85 minutes rather than 110 minutes.

•**Special Needs/Disability Services:** "Concord University is committed to responding to the needs of students with disabilities as defined by the Americans with Disabilities Act. Please inform your instructor at the beginning of the class semester if you have a disability and are requesting accommodations. It is your responsibility to self-disclose that you are requesting accommodations. The University and instructor will provide you with a reasonable accommodation. You should register with CU's Disability Services Office, located in the Athens campus Jerry and Jean Beasley Student Center, Bottom Floor, across from the Campus Post Office. The Disability Services Office phone is 304-384-6086 or you can email the Disability Services Coordinator, Nancy Ellison, at nellison@concord.edu for assistance."

•**Syllabus Changes:** Changes may be announced verbally in class at any time or posted on Moodle or email – You are responsible for such changes even if not in attendance.

•**Disallowed in Class:** Use of headphones/ear buds, cell phones, and other electronic devices. If you are using a laptop or tablet or cell phone during class, it must be for a class activity such as a visit to a web site or Google Earth. No Facebooking, texting, tweeting, blogging, chatting, surfing, streaming, etc. You will be reminded to stop on the first offense and further use will result in an invitation to leave the room for the rest of the class period and may be considered disorderly conduct (see below). Photography and internet use is not allowed during exams: **If you are found utilizing the internet, a phone, or a camera during an exam, you will be expelled from the exam with a grade of zero, be assigned a grade of F for the course, and will face charges of academic dishonesty.** I reserve the right to monitor the room with cameras.

•**CU Honor Code:** "As a member of the Concord University Community I will act with honesty and integrity in accordance with our fundamental principles and I will respect myself and others while challenging them to do the same." **Your enrollment in this course indicates that you have accepted and agree to abide by the principles of this code.**

• **Academic Dishonesty:** Academic dishonesty is morally unacceptable as well as destructive to the learning and teaching atmosphere. Academic dishonesty includes the giving or receiving of improper help on exams or assignments, falsifying documents, and plagiarism (the act of stealing and using, as one's own, the ideas or the expression of the ideas of another). Such dishonesty can lead to a variety of penalties – including but not limited to failure of assignment, failure of course, loss of institutional privileges, or dismissal from the

University. I take enforcement of academic dishonesty seriously and will immediately give a zero for the exam or assignment with no makeup possible (i.e., the zero cannot be replaced or dropped from the grade calculation under any circumstances); *additional* penalties are possible including assignment of an F for the course. Refer to the CU catalog for additional information and consequences.

• **Classroom Conduct and Allen's Diversity Statement:** Civil conduct is expected in class, in lab, in the field, online, and in any out-of-class interactions that may occur between course participants, even if informal. I am personally concerned with issues of diversity, equity, and inclusion. It is our collective responsibility as individuals in a class setting to value inclusivity. We will create a cooperative environment that is free of discrimination or harassment regarding gender, age, race, nationality, religion, atheism, political beliefs, sexual orientation, disabilities, military service, the shape of your body, or other innate differences. We may disagree with each other on beliefs, but we do so with civility and an open mind. In this course, we will learn mainstream scientific theories as presently practiced, and controversial topics will be presented in the spirit of position statements issued by major scientific societies such as the Geological Society of America and the American Geophysical Union. Students in violation of this policy will be warned either verbally or in writing and possibly asked to leave. Typically, a second offense will result in permanent removal from the class with a failing grade, although I reserve the right to do so on a first offense if I consider the case to be egregious. Refer to the CU catalog for additional expectations.

• **Sexual Harassment & Assault:** Federal law, Title IX, and Concord University policy prohibits discrimination, harassment, and violence based on sex and gender (including sexual harassment, sexual assault, domestic/dating violence, stalking, sexual exploitation, and retaliation). If you or someone you know has been harassed or assaulted, you can receive confidential counseling support through the Concord University Counseling Center (304-384- 5290). Alleged Violations can be reported non-confidentially to the Concord University Title IX Coordinator at 304-384-6327 or titleix@concord.edu. Reports to Campus Security can be made at (304- 384-5357). As an employee at Concord University, I am a mandatory reporter which means I must report any sexual misconduct I am made aware of. This includes verbal or written (such as in an assignment) disclosures of sexual harassment or sexual assault.

• **Emergency Alert System.** Concord University encourages everyone to register for instant text message alerts. Alerts will only be used for security and safety notices. All students, faculty, and staff are eligible to receive text message alerts by cell phones or email. Please contact the IT Help Desk for further assistance (304-384-5291).

• **Emergency Information.** Emergency/courtesy telephones are located at the main entrance of each residence hall and at various other locations on campus. Emergency telephones can be identified by the flashing blue light and will provide the user with a direct link to Public Safety at the press of a button. To report an on-campus emergency, call 304-384-5357 or 911. The Office of Public Safety is located on the bottom floor of the Rahall Technology Center. For further emergency information go to: <http://www.concord.edu/administration/office-public-safety>