

EARTH SCIENCE/GEOSCIENCE GEL-109-I50.SP2017

Instructor: Professor TJ Brown

browntja@jccmi.edu

tjbrown@adrian.edu

Required:

Text: **The Changing Earth: Exploring Geology and Evolution**, 7th Ed. Monroe and Wicander; ISBN10: 1-285-73341-X; ISBN13: 978-1-285-73341-8 Lab Manual:

Handouts: Online.

Course Description:

This course serves as a foundation for the Earth sciences and Earth science majors. Emphasis is placed on laboratory experience and class discussions to reinforce scientific principles. Earth science case studies are covered in detail. In laboratory, the students will learn how to apply basic scientific principles through active learning and application.

Students will develop an earth science skill-set to understand the four strands of scientific investigation: content, process, communication, and the nature of science. Students will use the critical thinking to evaluate scientific information, data, and current earth science issues. The foundation for earth science will be constructed using the four strands as they pertain to the atmosphere, biosphere, lithosphere, and hydrosphere. The fundamental concepts in earth science, like cycles, geological timeline, geology, geochemistry, geophysics, and biosphere interactions, are presented in context with current issues. The students will compare and contrast the content and process through communications with their peers and the instructor ultimately understanding the nature of science. This course is designed for people interested in earth issues using their computational skills, and includes a strong laboratory component.

Upon completing this course students will retain a skill-set derived from critical thinking and environmental scientific methodology. This skill-set can be used in science classes following earth science, and in problem solving needs throughout their lives. Although this course is an introductory class, introductory does not translate into easy. This course does not require background knowledge in earth science. It will require effort to build the scientific foundation and the philosophical underpinnings of critical thinking and scientific thought. Students will have to spend time studying the material to succeed. To receive a 4.0 in this course, you should expect to study 16 hours a week (4 credit hours x 4.0 grade = 16 hours of study), and depending on your study skill-set, this time commitment may increase or decrease. You are responsible for the resulting grade that you shall receive.

Tentative Schedule:

Section Title	Session	Day	Topic	Ch.
Introduction to Geology and Minerals	5-23	T	Introduction	1
	5-25	H	Plate Tectonics	2
	5-30	T	Rocks and Minerals	3
Rocks and Minerals	6-1	H	Exam 1	
	6-6	T	Igneous Rocks	4
	6-8	H	Volcanoes and Mountains	5
	6-13	T	Sedimentary Rock	7
	6-15	H	Metamorphic Rock	8
Weathering and Erosion	6-20	T	Exam 2	
	6-22	H	Weathering and Erosion	6
Mountains, Sea, and Interior	6-27	T	Mountain Building	10
	6-29	H	Earth's Interior	9
	7-4	T	Earth's Interior	9
Action of Water	7-6	H	Exam 3	
	7-11	T	Running Water	12
	7-13	H	Running Water	12
	7-18	T	Groundwater	13
	7-20	H	Glaciers and Glaciation	14
Geologic Time & Evolution	7-25	T	Exam 4	
	7-27	H	Geologic Time	17
	8-1	T	Geologic Time	17
	8-3	H	Evolution	18
	8-8	T	Evolution	18
Final Week	8-10	H	Exam 5	

** Scientific papers and additional chapter sections may be required for each topic Important Dates***: Refer to the Deans' web page

Course Objectives:

Upon completing this course I will be able to:

- Understand how the nature of science is a result of the content, process, and communication; and, how this process is self-correcting.
- Identify the big ideas in scientific discourse including how levels of scientific hierarchy pertain to biotic and abiotic properties of earth science.

- Integrate information of natural processes that govern the natural world into laboratory and field practice.
- Critically evaluate data drawn from natural phenomena to establish a scientific baseline.
- Understand the connection between physical and chemical cycles as they relate to the different earth's domains.
- Measure environmental variables and interpret results of scientific studies of earth science problems.
- Understand how the mechanisms of geology, physics, chemistry, and biology interact to create emergent processes of systems.
- Understand sustainability as it relates to the earth sciences and evolution.
- Understand factors affecting global climate change and human impact on the environment.

General Education Outcomes:

All JC graduates should develop or enhance certain essential skills while enrolled in college, as defined by the Board of Trustees. The General Education Outcomes addressed in this class are:

GEO 4: Demonstrate scientific reasoning

Incompletes - Consistent with JC policy, incompletes are granted with instructor permission only in situations where a student is **passing** the course with 90% of the curriculum covered and encounters an unusual emergency that prevents them from completing coursework.

Instructor Absence/School Closing: If I am unable to attend class, the building secretary will be notified, and a notice will be posted outside our room. If the college is closed due to inclement weather, announcements are made on local radio stations. With the exception of these two situations, **ASSUME WE WILL HAVE CLASS.**

Plagiarism and Cheating - Be sure that **homework and any assignments are your own work.** Copying anyone else's work is **plagiarism**, and plagiarized work will **not be accepted.** Evidence of plagiarism or cheating on any exam, lab, lab quiz or assignment will result in a "0" score for that assignment and notification of the Academic Dean - please see the JC Academic Honesty Policy.

Consequences/Procedures

A faculty member who suspects a student of academic dishonesty may penalize the student by taking appropriate action up to and including assigning a failing grade for the paper, project, report, exam or the course itself. Instructors should document instances of academic dishonesty in writing to the Dean of Faculty.

Student Appeal Process

In the event of a dispute, both students and faculty should follow the Conflict Resolution Policy. The policy is presented in the Student Rights and Responsibilities section of the student handbook. **The first**

step of this process is to set up a scheduled conference with the instructor to discuss the issues of concern.

Extra Credit - is not given in the course. Focus your time and energy on completing course assignments and studying for lab quizzes and lecture exams.

Course Help and Special Needs - if you have special needs that I should be aware of in order to help you to best learn course material, please let me know as soon as possible. Students requiring special assistance (including those affected by the Americans with Disabilities Act) should contact the **Center for Student Success** in **Bert Walker Hall, 796-8415**. Tutoring services are free at JC - if at any point in the course you feel that you would benefit from a tutor, contact me and/or the CSS.

Computer Resources – reliable computer access is necessary for this course, as some course materials can be accessed only through the course webpage. I will post announcements and grades, as well as many other course materials like discussion papers through this system. Simply type in the URL <http://jetnet.jccmi.edu/>.

Grading Scale - Grades will be rounded to the nearest percent. Grades may be curved at the instructor's discretion.

<u>Percent</u>	<u>Grade</u>	<u>Percent</u>	<u>Grade</u>	<u>Percent</u>	<u>Grade</u>
90 - 100%	4.0	75 – 79 %	2.5	60 – 64 %	1.0
85 – 89 %	3.5	70 – 74 %	2.0	55 – 59 %	0.5
80 – 84 %	3.0	65 – 69 %	1.5		

Student Responsibilities:

Attendance - I expect that you will attend every class and considering the scientific nature of this class attendance means to be present and engage with your colleagues. Because testing is primarily from lectures, and discussion papers are only accepted at specific deadlines, setting a schedule is recommended. Missing those assignments or study time makes it very difficult to do well.

Keep Up With Homework - Class assignments and tests **cannot** be made up so setup a scheduled regimen and stick to it.

Contribute to a courteous learning environment – Our class interactions are valuable because science is a social exercise. Please be polite, especially on discussion topics, and to avoid confusion, be positive in written communications. Disrespectful behavior will be dealt with summarily with a focus on clarity and understanding.

Study - This is a difficult course that will take significant study time. You will need to use the text and electronic resources. I recommend you review reading notes (that means you should take reading

notes) and do study questions to prep for exams and lab quizzes. I expect you all to study at least 8 hours outside of class interactions using a variety of methods to earn a passing grade. Some of you will take less time and some will take more time. Know your abilities and accommodate them in your schedule.

Grading:

Lecture, exams and discussion account for 70% of the overall grade, and laboratory accounts for 30% of the overall grade, and is described here. The class has a total of 1000 points of assessment which is a weighted average of the overall point distribution.

Exams – There will be approximately five exams in the course, which may include multiple choice, fill-in, short answer, problem solving, and essay. The lowest exam score is dropped to account for eventualities. A missed exam will be considered the dropped exam. The final cannot be dropped.

Laboratory:

Online Response Times: Email: To the best of my ability, email replies to coursework questions will be sent between 8am on Mondays and noon on Fridays, within 72 hours of message receipt from a student. Don't wait to start your labs until the weekend, as I typically will not respond to emails then. Please be sure to communicate with me about the course from your JC email so that I can be sure of your identity. It is your responsibility to check and utilize your JC email account. Phone calls: I check my voicemail on Mondays, Tuesdays, and Wednesdays between 9am and noon. It is best to email me your questions.

Technical Support: For technical difficulties, contact the JC Solution Center, either through the JC email system, or at 787-0800, X8639. Technology failure is not an excuse for late work. Start assignments early, save often, and have a back up plan.

Students accumulate points in lab, converted into a lab percentage that will count for 30% of the overall course grade. There are two sources of the lab points:

1. Lab exercises – completed by the due date each week (Thursdays at 11:55pm), each worth 5 points each. The lab experience is a crucial part of the course. **If a student misses three laboratories, then that student will have to repeat the course and receive a failing grade for the current semester.** DO EVERY LAB! You must complete the lab pre-quiz in order to submit the lab. Failure to do so will result in a zero for the lab. Late work is not accepted. One of your lowest lab scores will be dropped.
2. Lab pre and post quizzes – are worth 5 points each. Quizzes consist of 5 questions and you will be timed. Pre-quizzes are due on Thursdays by 11:30pm, you must complete the pre-quiz before you can submit the lab. Failure to do so will result in a zero for the entire lab (5 points pre-quiz, 5 points lab, 5 points post-quiz). Post-quizzes are due the Thursday of the week following the lab.

Example Lab 1 Graphing – Pre-quiz is due 1/19/17 at 11:30pm, Graphing lab is due 1/19/17 at 11:55pm, Post-quiz is due by 1/26/17 at 11:30pm..

Participation in Labs - Instructors must report student participation on a number of occasions throughout the semester. You will be reported as a **V** for *Verified* (meaning you are attending, participating and passing), as an **H** for *Help* (meaning you are attending and participating, but not passing), or as **Q** for *Quit* (meaning you are no longer attending and/or participating in class). **Once you have been dropped from a class by an instructor you cannot be put back into the class without the instructor's signature.**

Failure to complete any combination of three (3) Laboratory Exercises or Laboratory Quizzes will result in an automatic Q during the next HQV reporting period and your dismissal from the course. If you fail to participate after the final HQV reporting period (1 week after midterm), you will not be automatically dropped from the course, but will receive a grade of 0.0 (E) for failing to participate in the course.

Plagiarism and Cheating - Evidence of plagiarism (copying another's work) or cheating on a lab, quiz, or practical will result in a "0" score for that assignment and notification of the Academic Dean - see the JC Academic Honesty Policy. While it is acceptable to work with another student on a lab exercise, it is never acceptable to submit identical answers.

A caution from your instructor: Online courses cover the same amount and level of content as "face to face" courses. Face to face students spend two hours a week in lab, and then require additional time to study for quizzes and practicals. Students taking this course online find that it requires **more time** than when taken in the traditional format. It is not recommended for students who have not had a previous online course, nor for those who have not had college level science. You are very unlikely to be successful in lab unless you can commit at least 3-4 hrs per week to the lab portion alone.

Lab assignments must be handwritten and scanned and submitted in a PDF format by Thursday evenings at 11:55pm on their due date. File names should include your last name and the name of the lab ex. "BrownGraphingLab.PDF". If assignment is not legible you will not receive points for it. You will not receive credit for the lab if any of the following occurs: not handwritten, not PDF format, name is missing from the assignment, or any form of cheating/plagiarism.

Attendance and Participation

The school has a vested interest in making sure you are attending the classes in order to help you be successful. In light of this we, as instructors, must report your participation on a number of occasions throughout the semester. You will be reported as a V for Verified (meaning you are attending, participating and in addition passing), as an H for Help (meaning you are attending and participating, but not passing), or as Q for Quit (meaning you are no longer attending and/or participating in class). There are several reasons you may be listed as a Q, which I will address in a moment, but it is important to

note that once you have been dropped from a class by an instructor you cannot be put back into the class without the instructor's signature.

Possible Reasons for Being Assigned a Q

- Failure to attend class within the first week without contacting the instructor.
- Failure to attend class (log-in) for greater than three (3) weeks without contacting the instructor.
- Failure to take two (2) Unit Exams
- Failure to take five (5) Quizzes
- Failure to complete three (3) Laboratory Exercises

These conditions will result in an automatic Q during the next HQV reporting period and your dismissal from the course. If you fail to participate after the final HQV reporting period (1 week after midterm) you will not be automatically dropped from the course but will receive a grade of 0.0 (E) for failing to participate in the course.

Collaboration

While JC encourages students to collaborate in study groups, work teams, and with lab groups, each student should take responsibility for accurately representing their own contribution.

Communication with Instructors

Your student email will be the official communication format for any grade requests or participation questions. Please take the time to familiarize yourself with your JC email.

First Assignment

Please post your understanding of the following statement to the syllabus recognition discussion in JetNet:

I have read the GEL 109 course information packet (course information, course calendar and academic honesty policy). I understand the information they contain.