Earth Science

GEL 109.I2

Spring 2020

Number of Credits: 4

Location/Venue: Online

Meeting Dates: 5/18/2020 to 8/10/2020

Instructor: Jessica Tashman

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Online Office Hours: On Big Blue Button, times to be determined

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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. This course has a laboratory component.

Course Goals

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.

Course Objectives

Think in systems.
Read and interpret scientific graphs and tables.
Communicate scientific information.
Connect the nature of science to content, process, and communication.
Link the scientific method to peer review and self-correcting mechanisms.
Articulate the big ideas in scientific discourse. Integrate information of natural processes that govern the natural world.
Critically evaluate data drawn from natural phenomena.
Establish a scientific baseline.
Understand the connection between physical and chemical cycles within Earth's domains.
Interpret results of Earth science studies. Connect the mechanisms of geology, physics, chemistry, and biology to emergent properties.
Understand sustainability as it relates to the earth sciences and evolution.
Articulate the 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.

Essential Competencies

1. Think critically and act responsibly
2. Work productively with others, recognizing individual contributions to group success
3. Exhibit technological literacy

The General Education Outcomes addressed in this class are:

GEO 4: Demonstrate scientific reasoning

Textbook

- **The Changing Earth: Exploring Geology and Evolution**, 7th Ed. Monroe and Wicander; ISBN10: 1-285-73341-X; ISBN13: 978-1-285-73341-8
- The lab manual is digitally available on JetNet.

Text Book Zero! This text is available to rent in a digital format. Please see the links posted on our class Jet Net site. This text is available to rent or purchase in digital format through the JC Bookstore: ISBN-10: 1305153332 ISBN-13: 9781305153332

Extras

- Rock and Mineral Kit Earth Science ($50.36 from the JC Bookstore)
- GEL 109 Lab Kit with Digital Scale ($119.95 from the JC Bookstore)
- Field Notebook ($16.99 from JC Bookstore)

Grading Procedure

Lecture, exams and discussion account for 70% of the overall grade. Laboratory accounts for 20% of the overall grade, and two lab Practicals account for 10%. The class has a total of 1000 points of assessment which is a weighted average of the overall point distribution.

Exams (400 points): There will be approximately five exams in the course, which may include multiple choice, fill-in, short answer, problem solving, and essay. Each exam is worth 100 points. The lowest exam score is dropped to account for eventualities. A missed exam will be considered the dropped exam; for this reason, **exams cannot be made up**. The final exam cannot be dropped. **** The first 4 exams open on Thursdays and close Saturdays by 11:59 PM. They are timed and limited to one attempt. The Final Exam is open between Wednesday and Friday of the final week of class. ****

Labs (120 points): There are 12 lab assignments in this course, each is worth 10 points. Labs are open for one week and are due every Sunday by 11:59 PM EST. Laboratory should not be missed due to the integrated active learning exercises using inquiry-based methods; however, the lowest lab grade will be dropped. The labs take a significant amount of time to understand and master, therefore, please recognize the required time and review for mastery of the skillset. If a student misses three laboratories, then that student will have to repeat the course and receive a failing grade for the current semester.

Please do not wait until the last minute to begin the lab as I may not have time to answer questions that arise! Labs assignments must be handwritten, scanned, and submitted in PDF format – a video is posted on the course page should you need further instructions on converting to a PDF. Files names should include your last name and the name of the lab; for example, “TashmanGraphingLab.PDF”. You will receive a zero if any of the following occurs; the lab is not legible, it is not handwritten, it is not the most current version of the lab, it is not submitted as a PDF, it has an improper file name, your name is not written on the lab, **or there is ANY form of plagiarism or cheating**. Should a student miss three lab assignments or receive three “zeros” on lab assignments (or any combination of missing/zero grade assignments) that student will have to repeat the course and will receive a failing grade for the semester.

Lab Practicals (50 Points): There are two lab practicals scheduled, and they are worth 10% of your grade. Lab practicals will be posted on JetNet and will open one week prior to the due date. Lab practicals are timed and limited to one attempt.

Grading Scale

GPA	GRADE RANGE
4.0	90-100%
3.5	85-89%
3.0	80-84%
2.5	75-79%
2.0	70-74%
1.5	65-69%
1.0	60-64%
0.5	55-59%
0.0	0-54%

Failure

If you do not participate as expected for a college student, then you will be dropped from the class (meaning you are no longer attending and/or participating in class). There are several reasons you may be dropped (please see the following list). 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 Dropped from your Class:

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

These conditions will result in an automatic withdrawal during the next week and your dismissal from the course. If you fail to participate after the last withdrawal date (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.

Academic Honesty Policy

Academic Honesty is defined as ethical behavior that includes student production of their own work and not representing others' work as their own, by cheating or by helping others to do so.

Plagiarism is defined as the failure to give credit for the use of material from outside sources. Plagiarism includes but is not limited to:

- Submitting other's work as your own, *including directly copying written material from the internet*
- Using data, illustrations, pictures, quotations, or paraphrases from other sources without adequate documentation
- Reusing significant, identical or nearly identical portions of one's own prior work without acknowledging that one is doing so or without citing this original work (self-plagiarism)

Cheating is defined as obtaining answers/material from an outside source without authorization. Cheating includes, but is not limited to:

- Plagiarizing in any form
- Using notes/books/electronic material without authorization
- Copying
- Submitting others' work as your own or submitting your work for others
- Altering graded work
- Falsifying data
- Exhibiting other behaviors generally considered unethical

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.

Communicating with your professor

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. ** Be aware when you send a message to me on JetNet, the message goes to my JC email. The reply will go to your JC email. If you think I didn't see it, please send me an official email through your my.jccmi.edu account.

Accessibility

Jackson College understands that cultivating a broadly diverse community is crucial to our educational mission and to our foundational commitment to leadership and service. Jackson College is fully committed to ensuring our courses are accessible to everyone including those with disabilities. We are currently working to increase accessibility and usability of our course materials in order to meet or exceed the requirements of Section 508 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1991 and Web Content Accessibility Guidelines (WCAG) 2.0. For more information about Jackson College's efforts to ensure accessibility please visit the Jackson College accessibility web page.

If you have an accessibility need in any of our classes please e-mail the Center for Student Success at JCCSS@jccmi.edu or visit the Center for Student Success web page.

At the Center for Student Success (CSS), we are committed to providing all students the opportunity to achieve academic success by providing a variety of support services free of charge to Jackson College students. This includes, but is not limited to, peer and faculty tutoring, mental health referral, temporary assistance with transportation, various workshops/seminars, and the TRIO program.

In addition, the CSS staff is committed to adapting the College's general services to meet the individual needs of otherwise qualified students with disabilities, for the purpose of providing equal access to all programs and facilities.

Course Management

Ways that students can manage their enrollment in a course for special circumstances. Includes withdrawal, and audit and incomplete grading procedures.

Makeup Policy

Ways that students can manage their enrollment in a course for special circumstances. Includes withdrawal, and audit and incomplete grading procedures.

Help

Available learning services or opportunities for students seeking help with their course work. May include information about tutors, learning centers, reserved library materials, counseling services.

Academic Advising

It is important to contact a Center for Student Success professional prior to the start of the semester in order to receive accommodations in a timely manner. While we will make every effort to coordinate accommodations in a timely manner, failure to self-identify prior to the start of the semester may delay notification to instructors and timeliness of acquiring accommodations. Accommodations do not automatically carry over to the next semester. Please e-mail JCCSS@jccmi.edu or visit the Accommodations for Students with Disabilities web page

Student Responsibilities

Requirements beyond scheduled classes or laboratories, e.g., clinicals, extra credit assignments, TBA sessions, field placement, special project instructions, contract learning conditions, study hours required outside class, unscheduled class meetings, attendance at concerts or other required events.

Attendance- Participation Policy

For online sections:

Just as in a traditional classroom course, regular class participation and keeping up on the reading and assignments is strongly correlated with survival in college. It is my recommendation that you plan to do your assignments and take your exams BEFORE the last day they are due. If problems occur, there is time to fix them before the deadline.

In compliance with Federal Title IV funding requirements, as well as college initiatives, I will be monitoring student participation on a regular basis and officially reporting student activity throughout the term to assure compliance with college policy and federal regulations. It is imperative that you log in to the course and actively participate *within the first couple days of the term* to validate your enrollment in the course. After that, not actively participating in class may result in you being withdrawn from the course. Being withdrawn from a course can have an impact on financial aid, billing, athletic eligibility, and housing status. As a college student you are responsible for how your participation impacts your academic progress; the accountability lies with you.

Calendar

A partial or complete list of dates or class periods for the course. Within the calendar on specific days are: Assignments and exams. Associated readings, lectures, and videos are listed in JetNet for each week.

**Also include a statement that calendar timelines and assignments are an approximation and could be changed.*

WEEK #	DATE	TOPIC	HOMEWORK
1	May 18-24	Dynamic Earth, Plate Tectonics	Graphing Lab Scientific Measurement Lab LABS DUE MAY 24th BY 11:59 PM EST
2	May 25-31	Minerals	Mineral ID Lab LAB DUE MAY 31st BY 11:59 PM EST
3	June 1-7	Igneous Rocks and Volcanoes	**EXAM 1 CHAPTERS 1-3 (Due Saturday June 6th by 11:59 PM)** Igneous Rock ID Lab LAB DUE JUNE 7th BY 11:59 PM EST
4	June 8-14	Sedimentary Rocks	Sedimentary Rock ID Lab LAB DUE JUNE 14th BY 11:59 PM EST
5	June 15-21	Metamorphic Rocks	Metamorphic Rock ID Lab LAB DUE JUNE 21st BY 11:59 PM EST

6	June 22-28	Weathering, Erosion, and Soil	**EXAM 2 CHAPTERS 4,5,7,8 (Due Saturday June 27th by 11:59 PM)** **LAB PRACTICAL 1 (Due June 28th by 11:59 PM EST)**
7	June 29-July 5	Earthquakes, Earth's Interior, Mountain-Building	Basketball Earth Lab LAB DUE JULY 5TH BY 11:59 PM EST
8	July 6-12	Running Water	**EXAM 3 CHAPTERS 6,9,10 (Due Saturday July 11th by 11:59 PM)** Isostasy Lab LAB DUE JULY 12th BY 11:59 PM EST
9	July 13-19	Groundwater and Glaciers	Find and Identify Rock Specimens "Field" Activity LAB DUE JULY 19th BY 11:59 PM EST
10	July 20-26	Geologic Time	**EXAM 4 CHAPTERS 12,13,14 (Due Saturday July 25th by 11:59 PM)** Geological Time Lab LAB DUE JULY 26th BY 11:59 PM EST
11	July 27-August 2	Evolution	Evolution Lab LAB DUE AUGUST 2ND BY 11:59 PM EST
12	August 3-9	Final Week – Everything is due by Friday August 7th at 11:59 PM	**EXAM 5 CHAPTERS 17,18 (Due Friday August 7th by 11:59 PM)** **LAB PRACTICAL 2 (Due Friday August 7th by 11:59 PM EST)**

Important Dates:

DATE	EVENT
SEMESTER BEGINS	MAY 18
MEMORIAL DAY – NO CLASSES	MAY 25
INDEPENDENCE DAY – NO CLASSES	JULY 3-5
SEMESTER ENDS	AUGUST 10

Please acknowledge that you've read the syllabus on JetNet

By acknowledging the syllabus you admit to having read the syllabus and that you understand its content. **This acknowlegement must be completed by Sunday May 24th at 11:59 PM EST to remain in the class.**