GSC 101-02: The Earth and the Environment

Fall 2014

Department: Geosciences
Course & Semester: GSC 101-02
Credit Hours: 4
Lecture: MWF 12:30–1:20 pm in Blackburn 320

Instructor: Dr. Sung-ho Hong
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Office Hours: 8:00 – 9:30 & 10:30 – 12:30 MWF

I. **Title**: The Earth and the Environment

II. **Course Description and Prerequisite(s)**: This course will provide a basic understanding of the Earth and its surrounding environment including materials, internal and external processes, and plate tectonics. The course serves as an introduction to the geological and environmental sciences and is a prerequisite to advanced study.
Prerequisite(s): None

III. **Course Objectives**: To provide the students with the fundamental knowledge and tools necessary to understand the geologic processes forming the composition, structure, and environments of the Earth. This course will examine the common rock-forming minerals and their properties, different geologic environments, plate tectonics and other issues related to geology that affect our environment and everyday lives. As a result of participation in this course, the student should define, interpret, apply and analyze information and concepts related to the following topics

- Earth as a complex system
- Earth materials - minerals and rocks
- Geologic time and the evolution of the planet
- Plate tectonics as a unifying theory of the Earth
- Structure of the Earth
- Processes associated of the interior of the Earth
- Processes influencing the surface of the Earth
- Geologic hazards and their impact on humans
- Earth's natural resources and sustainability

IV. **Content Outline:** Lecture

Topic	*Recommended Readings*
1. An Introduction to Geology	Chapter 1
2. Matter and Minerals	Chapter 2
3. Igneous Rocks	Chapter 3
4. Volcanoes and Volcanic Hazards	Chapter 4

5. Sedimentary Rocks	Chapter 6
6. Metamorphic Rocks	Chapter 7
7. Earth Interior	Chapter 1
8. Weathering and Soils	Chapter 5
9. Plate Tectonics	Chapter 15
10. Structural Geology	Chapter 17
11. Geologic Time	Chapter 18
12. Mass Wasting	Chapter 8
13. Surface and Groundwater	Chapter 9&10
14. Glaciers and Glaciation	Chapter 11
15. Earthquakes	Chapter 14
16. The Origin of the Earth	Chapter 19

V. **Instructional Activities:**

A. Lecture
B. Lab
C. Quiz
D. Movie
E. Exam

This course is designed to promote scientific literacy associated with the geologic environment through active learning. I will focus on how data are gathered and how problems are evaluated in order to study the natural processes occurring on the Earth. Since this course is taught primarily as a large assembly, active learning activities are more readily utilized in the laboratory session. Group discussion, pair-sharing, and collaborative research dealing with case studies of historic geologic phenomena and current global environmental issues are utilized when feasible.

Your instructor is demanding and maintains high academic standards. You should come to the course expecting to work hard. Please come by to see me if you are having trouble with any of the material presented in this class. I want to help. Please make use of my office hours and feel free to email or call me at any time with questions. Email is the best way to get in touch with me.

VI. **Field, Clinical Experiences and/or Lab Experiences**:

A. You must be registered for a laboratory section in order to receive a course grade.
B. ALL LABS MUST BE COMPLETED in order to receive a course grade!

VII. **Text(s) and Resources**: Rock and mineral samples; topographic and geologic maps; stereoscopes; DVDs/CDs and internet access.

Lecture Textbook (optional):
Title: Essentials of Geology, 12th Edition; Author(s): Frederick K. Lutgens, Edward J. Tarbuck, Dennis Tasa; Publication: Prentice Hall; ISBN: 0321947738

GSC 101 Lab Schedule—All Sections

Week of	Subject	Assignment
Aug 18	*No labs meet this week*	
Aug 24	Ore Minerals	Chapter 1, 2
Sept 1	Rock Forming Minerals	Chapter 1, 2
Sept 8	Igneous Rocks	Chapter 3
Sept 15	Sedimentary Rocks	Chapter 4
Sept 22	Metamorphic Rocks	Chapter 5
Sept 29	**Midterm Exam**	**covers weeks 1-5**
Oct 6	Plate Tectonics/Sea Floor Spreading	Chapter 17
Oct 13	Geologic Structures	Chapter 14
Oct 20	Topographic Maps	Chapter 6
Oct 27	Remote Sensing of Volcanic Hazards	Chapter 7
Nov 3	Streams	Chapter 8
Nov 10	Groundwater	Chapter 9
Nov 17	Glaciers	Chapter 10
Nov 24	*No labs meet this week—Thanksgiving Break*	
Dec 1	**Final Exam**	**covers weeks 6-13**
Dec 8	*Finals Week—no labs meet this week*	

Lab Manual (required): *Laboratory Manual for Physical Geology*, custom order 8th ed. by Jones and Jones.

Lab Grades: No letter grade will be given for lab; only a numerical grade will be given by your lab instructor. Weekly quizzes may only be made up at your instructor's discretion; however the lowest quiz grade may be dropped.

Lab Attendance: YOU ARE REQUIRED TO ATTEND LAB AND REMAIN UNTIL THE END. Absences will be reported to your lecture instructor. YOU MUST TAKE BOTH EXAMS to obtain a lab grade for this course. Instructors will not accept any work over 1 week past the due date.

General Information: Lab instructors will only permit in their lab students who are listed on the computerized roll for a particular lab. If you know ahead of time you need to miss a lab, you may attend another lab for that week only; you must see both lab instructors first to confirm that there is space in the lab for you. **A $10.00 breakage fee will be assessed for lost or damaged materials.**
Make-Up Labs and Lab Exams: make-up exams will be given only for students with **excused absences** as described on page 9 of the University Undergraduate Bulletin, 2009-2011.

HELP! Sessions are available every Monday night from 6-8 PM in BB 332 for any students who want to review rocks and minerals, get additional help, or needs to make up the lab from that week.

VIII. **Evaluation and Grading Procedures:**

Lecture

Exam 1	100 pts
Exam 2	100 pts
Exam 3	100 pts
Exam 4	100 pts
Quizzes (8 @ 10 pts each, drop low)	70 pts
Movies (7 @ 5 pts each, drop low)	30 pts
	500 pts (76% of grade)

Lab

Midterm	50 pts
Final exam	50 pts
Quizzes (12 @ 5 pts each, drop low)	55 pts
	155 pts (24% of grade)

Final Grade will be computed: A: ≥90%, B:80-89.9, C:70-79.9, D:60-69.9, E: <60

Exam/Quiz Policy: Four lecture examinations will be given. The first three exams are given during our regular class time, but the last exam is given at the special time assigned to us during final examinations week. **Individual make-up exams will not be given**. If a student is absent from a scheduled lecture exam, the exam may be made up in a comprehensive make-up exam offered after Exam 4. Each student is permitted only one make-up exam. All lecture exams use a multiple choice, true-false and short answer formats. You may review your graded exam during the class meeting immediately after the exam is given. After review, all exams must be returned to the instructor. If you miss class on the date that an exam is reviewed, you forfeit the opportunity for review. Unannounced pop-up quiz and movie CANNOT be made up without an absence notification in advance. However, you can drop the **lowest** score each from a sequence of quizzes and movies.

Make-Up Exam: The **comprehensive** make-up exam is optional and given right after the last lecture exam. If you take the comprehensive make-up exam, that score will be used to replace the lowest score earned on the lecture exams you have completed. This replacement will take place even if the score on the comprehensive final is lower than the lowest lecture exam score.

Class participation & behavior: Participation will keep us all awake - class is more interesting if you ask questions and engage. However, disruptive behaviors, including excessive talking, arriving late to class, sleeping, reading newspapers, using unauthorized electronic devices during class is not permitted. Repetitive and seriously disruptive behavior, e.g., fighting, using profanity, personal or physical threats or insults, damaging property, may result in your removal from class. **Very importantly, text messaging and the use of laptop computers, IPads, and similar devices are not allowed in class. Violations of this above policy will result in the student being administratively dropped from the class by the professor!!** Extra credit (**up to 3%**) to your final score will be given to students who manage their class participation and behavior very well.

Audit Policy: must be approved by the instructor. Auditing students are required to attend lecture and complete all labs. They are **NOT** exempt from quizzes, exams and any other assignments. Final grade of **40% or better** is required to pass the Audit.

Incomplete Policy: Incompletes will only be approved in extenuating circumstances and only if one or two course components is missing (e.g., assignment or lab).

IX. **Attendance Policy**: Attendance is strongly recommended. Although attendance will not be graded, however, those who have 3 or less (including Lab) will gain **10 points** of extra credit to your final score. (However, I reserve the **right to forfeit** any **extra credit** point from students having poor behavior.**)** In this class, **I expect you to notify me in advance of any absences.** An excuse absence will be allowed only by submitting officially permitted document (e.g. doctor's note, letter from your coach) to the professor within 1 academic week of the absence. **I RESERVE THE RIGHT TO FAIL ANYONE MISSING 10 CLASSES** (including Lab) **OR MORE.** Please refer to the Murray State University Undergraduate Bulletin 2011-2013.

X. **Academic Honesty Policy:** I expect you to get together in small groups and discuss the problems. However, do not use these discussions as an excuse to copy someone else's solution to the assignment or let someone else copy your solution. All work you submit must be your own and should reflect your own understanding. **Cheating or plagiarism on exams or on assignments will result in a grade of zero** being recorded. A second offense will result in a failing grade for the course. If you are not sure about how to represent another person's work in an assignment, contact me for advice before submitting. Please refer to the Murray State University Undergraduate Bulletin 2011-2013.

XI. **Non-Discrimination Statement:** Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in employment, admissions, or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities. For more information, contact the Executive Director of Institutional Diversity, Equity and Access, 103 Wells Hall, (270) 809-3155 (voice), (270) 809-3361 (TDD).

XII. **Other Required Departmental or Collegiate Committee Information**
Assessment plan: Students must participate in all class assessment activities. I want to learn how well certain concepts are getting across and how the class is feeling about the material and the course as we go along. Course assessment will be done by asking set of multiple choice questions at the end of the semester Assessment activities will help me find out how well the day's outcomes were achieved and to determine the extent to which the course is meeting its goals.

XIII. The Racer Oral Communication Center offers free, one-on-one help with all aspects of the presentation process. We can provide assistance with topic selection, outlining, delivery, visual aids, and can video record your presentation. To make an appointment, please call 809-3458 or visit our website (**http://comcenter.murraystate.edu**) to schedule through our online calendar. To best make use of your time at the Center, please bring a copy of your assignment with you to your appointment.