



Physical Geology

INSTRUCTOR

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Web: http://highered.mcgraw-hill.com/sites/007337671x/information_center_view0

Book: <http://www.southsevierhigh.org/geology.html>

Flashcards: <http://quizlet.com/class/372449/>

GRADING POLICY

	3rd Qtr	4th Qtr
Assignments	20%	20%
Final Exam		40%
Midterm Exam	40%	
Laboratories	20%	20%
Quizzes	20%	20%

COURSE DESCRIPTION

This is a general course in Physical Geology and offers the equivalent material found in a college-level GEOL1010 course, including laboratory and field experiences. Although no college credit will be given at this time, students can expect to learn the same basic geological concepts and principles taught in a college course. This does not necessarily make the course more difficult, but ensures that students receive a well-rounded view of the subject of Geology, including career information.

COURSE OBJECTIVES

1. Describe the scientific method and discriminate between scientific and nonscientific information. Learn the geology of Sevier county and Utah.
2. State the age of the Earth as determined by scientific means and divide geologic time into the established Eras, Periods, and Epochs of the Geologic Time Scale.
3. Describe the structure of an atom and discuss how atoms bond, relating this to the structure and properties of minerals.
4. Define what a mineral is and describe the relationship of minerals to rocks. Understand Bowen's reaction series and the general chemistry and crystallography of mineral formation.
5. Describe the Rock Cycle, listing and relating its products and processes.
6. Describe how igneous rocks may be characterized by their texture, composition, and provenance.
7. Describe the origin of magma and the nature of intrusive and extrusive igneous processes and landforms.
8. Describe the Earth's differentiated structure and list the names and properties of the Earth's internal layers.
9. Describe and discuss the basic tenants of the theory of Plate Tectonics, including the origin of the theory, the types of plates, and the nature and consequences of their interactions.
10. Relate the theory of Plate Tectonics to the locations and occurrence of geologic hazards including earthquakes, tsunamis, and volcanoes.
11. Describe the Hydrologic Cycle, both in general terms, and how it specifically relates to geologic processes.
12. Describe the formation, properties and classification of sedimentary rocks.
13. Describe the processes involved in metamorphism and discuss the textural and mineralogical changes that occur in metamorphic rocks.
14. List and describe the major types of crustal deformation and associated geologic structures.
15. Define and describe the processes of weathering, erosion, and mass movement (mass wasting).
16. Describe fluvial processes and landforms.
17. Describe the processes effecting shorelines and the resultant shoreline features.
18. Describe the distribution and movement of water in the earth's crust, relating this to Karst topography and other hydrogeological features such as springs, hot springs and geysers.
19. Describe the origin and nature of glacial landforms and the circumstances that have been hypothesized to explain the Pleistocene glaciations.
20. Describe the role of wind as a geomorphic agent, listing the major types of aeolian features, and the location of their occurrence.
21. Learn the basics of Economic Geology including renewable and non-renewable energy sources, ores and ore formation, mining, and environmental considerations.

ATTITUDE AND BEHAVIOR

You are expected to act like a competent and a responsible student in my class. Failure to maintain a high level of discipline and increased study habits will result in your immediate drop from the course. I do not tolerate immature behavior! I expect you to act your age and to be anxiously involved in the class and the learning process. Do not do anything in my class that would detract from the learning atmosphere of the classroom.

General class etiquette must be observed during class time. This includes being respectful and courteous to the instructor and fellow students, and actively participating. Acting disrespectful in any manner to the instructor or other students will be met with strict

consequences that may include a drop in grade, disciplinary action by the teacher or principal, and removal from the course. In your communications with fellow students and the instructor, exhibition of the following is prohibited: anger, sarcasm, swearing, derogatory or racial comments, sexual innuendos or harassment, threats of violence or retaliation, and any other behavior deemed inappropriate by the instructor. When the bell rings, you and your fellow classmates are expected to be quiet and ready to learn.

FLASHCARDS

There are two sets of flashcards that you are to use for study purposes during this course. The flashcards are available on the Internet, they may be printed, or you may assess them via iPod/iPad/Android/iPhone etc. We will use the flashcards in class on a daily basis. You may use your electronic devices in class during our study of the flashcards only, and only when the teacher says it is appropriate. The online website is <http://quizlet.com/class/372449/>. For iPod/iPad/iPhone the app is called **flashcardlet**. Mr. Brady will demonstrate how to use the cards online, and how to access them on mobile devices.

TEXTBOOK & ASSIGNMENTS (20%)

The textbook that will be used for this course is online on the school's website. The link is <http://www.southsevierhigh.org/geology.html>. Homework will be assigned as per the tentative course outline (shown below). **All homework must be typed.** No hand-written homework will be accepted. You will be given an exact due date for each assignment. All homework must be turned in on time. No late homework will be accepted. Participating in sports and/or other activities does NOT excuse you from completing assignments on time. The rare exceptions of family emergencies, health problems, etc. will be taken into consideration. Be sure to keep up and only miss class when it is absolutely necessary.

MIDTERM EXAM (40%)

There will be an online midterm exam given at the end of 3rd Quarter. An in-depth review period will occur the day before the exam. You can expect to be tested on readings, lectures, notes, Internet assignments, and labs. **A score of 80% or higher is considered to be passing. You may take the exam a second time to get a better a score, but you cannot get higher than 80% on a re-take.** To avoid getting only 80% on the final exam, do all you can to do well on the final exam the first time.

FINAL EXAM (40%)

There will be an online final exam given at the end of the semester. The final exam will be comprehensive (this means that you will be expected to remember everything you have learned in this course). An in-depth review period will occur a few days prior to the final exam. **A score of 80% or higher is considered to be passing. You may take the exam a second time to get a better a score, but you cannot get higher than 80% on a re-take.** To avoid getting only 80% on the final exam, do all you can to do well on the final exam the first time.

LABORATORIES AND FIELDTRIPS (20%)

There will be a minimum of one laboratory/field investigation per week. Laboratory safety and technique will be addressed prior to any laboratory work being conducted. **You must submit a signed laboratory agreement before doing any laboratory activity.** A laboratory preparation/discussion session will be held the day before the laboratory/field investigation. Geology is best-learned through hands-on experience. We will be spending plenty of time outdoors doing real geology as it relates to the area in which we live. There will be a Spring fieldtrip to Zion's National Park and/or Goblin Valley. The fieldtrips are required in that you will need to do a fieldtrip summary assignment for credit. Parents are encouraged to go along.

QUIZZES (20%)

Quizzes are designed to help you see if you are mastering the material presented. **If you miss the day of a quiz, then you have two (2) school days to take it. If you fail to take the quiz within the two days, then you will get a zero on that quiz. You cannot re-take quizzes.** Most quizzes will be scheduled on Fridays, or at the end of a given chapter. There will be approximately 20 quizzes given throughout the semester (about 20-30 questions each).

YOUR RIGHTS

In this class you have the right to:

1. A safe learning environment that is free from physical or verbal abuse, intimidation, or harassment, including any and all forms of sexual harassment, obscenity, indecent, or inconsiderate behavior.
2. Report any and all problems or concerns to the teacher without feeling intimidated or afraid that your grade or class standing will suffer.
3. Receive a meaningful and useful education. This means that the teacher will be well prepared, have a variety of learning activities available, and will not waste your time and energy by giving you meaningless "busywork".
4. Have a learning environment that is free of drugs and alcohol.
5. Get all the help you need from the teacher in order to learn the subject matter. Do not be afraid to ask the teacher for help at any time.
6. Know what your grade is at any time. Just ask. Your grades will be posted a minimum of once per week.
7. Make choices and to express your own thoughts and ideas.
8. Be yourself and to have fun while learning.

TENTATIVE COURSE OUTLINE (In chronological order)

Chapter	Subject	Homework	In-class Assignments/Laboratories/Quizzes
	Syllabus, Course layout, Class rules, Lab Safety Agreement	Lab Safety Agreement turned in	
1	Introduction to Geology Geology of Sevier County	Intro to Earth Science (Pages 18-19. Questions 1-5)	Who needs Geology Video, Video 1,2
2	Atoms, elements, mineralogy, crystallography, Bowen's reaction series	Minerals (Page 13. Questions 1-4) Minerals (Page 20. Questions 1-7) Minerals (Page 25. Questions 1-5) Rocks (Page 8. Questions 1-7)	Mineral Identification Lab, Mineral Identification Quiz, Bowen's Reaction Series Assignment and Quiz, The Rock Cycle and Quiz, Video 12
3	Igneous rocks	Rocks (Pages 14-15. Questions 1-8)	Video 13
4	Volcanism, extrusive rocks	Volcanoes (Page 6. Questions 1-5) Volcanoes (Pages 14-15. Questions 1-8) Volcanoes (Page 21. Question 1-6)	Video 14
5,6	Weathering, soil formation, sediment, sedimentary rocks	Weathering (Page 9. Questions 1-7) Weathering (Page 19. Questions 1-6) Rocks (Page 21. Questions 1,4,5,6,7)	Video 15,17
7	Metamorphic rocks, metamorphism, hydrothermal rocks	Rocks (Pages 26-27. Questions 1-4)	Rock and Mineral Exam, Video 18
8	Geologic time	Earth's History (Page 7. Questions 1-5) Earth's History (Page 19. Questions 1,2,7,13) Earth's History (Pages 28-29. Questions 3,5,9) Earth's Past (Page 10. Questions 1-4) Earth's Past (Pages 19-21. Questions 2-10) Earth's Past (Page 29. Questions 1-5)	Geologic Time Scale Assignment and Quiz, Cross section quiz, Video 10,11
9	Mass wasting	Erosion & Deposition (Page 36. Questions 1-6)	Video 16
	Review and Midterm Exam		Review and Midterm Exam
10,11	Hydrologic systems, rivers and streams, flooding, drainage, groundwater, Topographic Maps	Earth's Water (Page 7. Questions 1-10) Earth's Water (Page 18. Questions 1-7) Earth's Water (Page 26. Questions 1-6) Erosion & Deposition (Page 10. Questions 1-8)	Topographic Maps Assignment and Exam, Groundwater Lab, Darcy's Law and Quiz, Video 19,20,21
12	Glaciers and Glaciation	Erosion & Deposition (Page 28. Questions 1-7)	Video 23
13	Deserts and wind action	Erosion & Deposition (Page 21. Questions 1-6)	Video 22
14	Waves, beaches, and coasts	Erosion & Deposition (Page 15. Questions 1-5)	Video 24
15	Geologic structures, formations, faults, folds	Earth's Surface (Page 24. Questions 1-7)	Strike and Dip Assignment and Quiz, Geologic Structures and Quiz, Video 8
16	Earthquakes	Earthquakes (Pages 10-11. Questions 1-15) Earthquakes (Page 23. Questions 1-12) Earthquakes (Page 30. Questions 1-11) Earthquakes (Page 36. Question 1-9)	Video 9
17	Earth's interior and geophysical properties	Plate Tectonics (Page 9. Questions 1-7)	Video 3
18,19,20	The sea floor, plate tectonics, mountain belts, continental crust	Earth's Oceans (Page 7. Questions 1-5) Earth's Oceans (Page 21. Questions 1-10) Earth's Oceans (Page 28. Questions 2-6) Plate Tectonics (Page 15. Questions 2-4) Plate Tectonics (Page 20. Questions 2-5) Plate Tectonics (Page 35. Questions 1-8)	Video 4,5,6,7
21	Earth's resources, Economic Geology, ores and ore formation, environmental concerns	Earth's Resources (Pages 9-10. Questions 1-6) Earth's Resources (Page 16. Questions 3-6)	Video 25,26
	Final Exam (comprehensive)		Review and Final Examination

POLICIES AND PROCEDURES CONTRACT

This class will use Classroom Dojo, which is a classroom management tool that allows the teacher to award or punish a student, based on behavior and preparedness. Following the rules and being prepared helps your grade, whereas violating the rules and not being prepared hurts your grade. In general, for every point lost in Classroom Dojo equates to a loss of 1% off your total grade.

Materials: You will have access to an iPad on a daily basis. You may choose to use the iPad for taking notes. Many assignments will also be done on the iPad. You must also bring with you a writing utensil and a notebook. If you must borrow a writing utensil, then you will be required to give up a shoe or your cell phone as collateral.

Quieting: When the bell rings, you are expected to be quiet. The student(s) who violate this rule will lose points in Classroom Dojo. You are required to raise your hand if you have questions. Failure to do so will also cost you points.

Tardies: A tardy has occurred when the bell rings and you are not in your seat. You will also get a tardy if you attempt to line up at the door prior to the bell ringing at the conclusion of class. Not only will you receive a tardy, but you will also lose points in Classroom Dojo. The third tardy will cost you one hour of restitution and one hour per tardy after that. The fifth tardy will bring about a parent meeting. The sixth tardy will cost you 5 hours of restitution.

- Absences:** You are required to keep up on all your work, regardless of being absent. See late work policy below. School policy says that you are absent if you miss more than 15 minutes of class time. On the 5th absence parents/guardians will be notified. On the 6th absence, you will be required to make up time by attending restitution. As per district policy, after 10 absences you will lose all credit for the class.
- Late work:** You will have one extra day for each day you are absent to make up your work. After that, you will lose 10% on the assignment up to the 5th day. After the 5th day, your work will not be accepted and you will receive a zero on that assignment.
- Extra credit:** Only occasional extra credit will be given, such as during "Giving it back". You cannot use extra credit to make up for incomplete, late, or missing assignments. Extra credit will only be added to your final grade at the end of the quarter.
- Leaving class:** Leaving class is not allowed unless it is an absolute emergency or if you have been called to the office. You must carry a hall pass with you. You will be given two free passes per quarter. After that, you will lose credit in Classroom Dojo for each time you must leave class. Do not abuse this policy or you may not be allowed to leave class at all.
- Disruptions:** A disruption includes talking out of turn, talking back to the teacher, or doing anything that requires the teacher to stop instruction. For the first offense you will get a verbal warning, and it will cost you a point in Classroom Dojo. For the second offense, you will be excused from the class to meet with the vice principal, you will lose credit in Classroom Dojo, and it goes on your school record. For the third offense, you will meet with your parents and/or guardians and the principal, it goes on your school record, and you may be removed from the class.
- Cheating:** Cheating will not be tolerated. For the first offense you will receive a zero on that assignment and loss of points in Classroom Dojo. The second offense will result in an F for the quarter.
- Language:** School policy is to address teachers as Mr., Mrs., or Miss. Coach or principal is also acceptable. Swearing or vulgar language will not be tolerated. You will receive a verbal warning for the first offense and loss of points in Classroom Dojo. Multiple offenses will cost you more points, and you may be referred to the vice principal. Using the "F" word will result in your immediate suspension from school for one day.
- Classroom:** You are not allowed to sit on desks, putting feet on tables, throwing trash in drawers, sinks, or on the floor, or write on school property. If you violate these rules, you will lose credit in Classroom Dojo. The classroom must be cleaned up and put back in order prior to leaving class. Some classes will require the use of the laboratory. The same rules apply in the lab. Any violations will cost you points in Classroom dojo, and you will be required to cleanup after yourself.
- Electronics:** iPads will be used throughout this course. You will sign a care and use agreement before you are allowed to use the iPads. iPads are for school use only. You are not allowed to use the iPads without permission. The iPads are to be left on your desk at all times. The iPads may not be removed from the classroom. Cell phones must be on your desk in plain sight. We will use cell phones from time to time in class for specific activities. If you are caught using a cell phone at all, without permission, you will lose your cell phone and it will be given to the vice principal. Any violations will cost you points in Classroom Dojo. If you have your own tablet device or laptop that you would like to use in class, then please talk personally with the teacher to make proper arrangements to use these devices in class.
- Other rules:** Violating any of the following will cost you points in Classroom Dojo: Lining up at the door before the bell rings, asking the teacher "what are doing today?", forgetting to put your name, date, and period on assignments, not taking notes during class, changing seats without the teacher's permission, talking while the teacher is talking, violating the school dress code in any way, doing other work or reading in class while the teacher is teaching, falling asleep in class, eating food in class (bottled water is ok), not taking the class seriously, not being prepared for class each day, not pushing in your chair when you leave class, touching things in the classroom without the teacher's permission, doodling and drawing while the teacher is teaching, and not being respectful to the teacher and/or fellow students.
- Testing:** All testing for this course will be done online. The tests may be taken on any device that has the Internet. Tests may be taken at home or at school. If you do not have access to a computer at home, then please talk with the teacher. You may use school computers or iPads to take tests. Tests are also available in a written format if needed. A score of 80% or higher is considered to be passing. You may take exams a second time to get a better a score, but you cannot get higher than 80% on a re-take, even if you get 100%.