

Course Information: This is an SE course in the University Studies Program (USP) and satisfies the introduction to geology requirement (i.e., 1000-level GEOL with lab) for degrees from the Department of Geology and Geophysics. **Prerequisites:** None.

Meeting times: Lecture: MWF 10:00-10:50; Classroom Building, RM 129. Laboratory: 10 sections; Geology Building RM 211 (see the University's Spring Schedule for meeting times)

Instructor Information: This course will be taught by three instructors:

Instructor	Office	e-mail	Phone	Office hours
Dr. Riebe	ESB 2008	criebe@uwyo.edu	766-3965	Tu W F 11-12
Dr. Swapp	ESB 3026	swapp@uwyo.edu	766-2513	M 1-2; Tu Th 9-10
Dr. Erin Campbell-Stone	GE 207	erincs@uwyo.edu	766-2053	TBD

The lecture portion of this course will be taught by Dr. Swapp and Dr. Riebe, two members of the Department of Geology and Geophysics faculty. The laboratory portion of this course is designed by Dr. Erin Campbell-Stone, and will be taught by a group of teaching assistants (all graduate students).

Who are these people? Dr. Riebe is a geomorphologist who uses isotopes and geochemical data from soils and rock to quantify rates of surface processes, including weathering and erosion in mountainous landscapes. Dr. Swapp is a petrologist who uses a variety of geochemical methods to study geological processes associated with deformation and metamorphism. Dr. Erin Campbell-Stone will be coordinating the laboratories; she is a structural geologist working on subsurface characterization for carbon sequestration.

Course Description, Objectives and Outcomes: The study of Earth encompasses a remarkably diverse array of natural processes and spans an enormous range of scales, from the very big (the formation of stars and planets) to the very small (the formation of elements and minerals). In a broad survey of physical geology, this course touches on everything from how minerals and rocks form to how they break down near Earth's surface during weathering. Why do volcanoes erupt in different ways? How are mountains built and eroded away? What causes tsunamis and why are they so devastating? How do we find and use (and sometimes abuse) Earth's resources? We'll touch on all of these questions and many more like them in this course. We'll also explore how Earth has changed over the broad expanse of "deep time" and consider how it is likely to change in the near and distant future. To enhance appreciation of the scientific method, we'll focus not just on what we know about Earth, but how we know it, and how our knowledge of Earth is sometimes imperfect and/or incomplete.

Your principal objective in this course is to acquire a foundational knowledge and understanding of geology and geophysics. If you achieve this objective, you will be well poised to tackle additional coursework in geology and the other natural sciences. You'll have a sense of the great antiquity of the universe and a greater appreciation for the world around you. You'll more fully understand how Earth as a system is central to the many great challenges that humans must tackle over the next century as resources dwindle against a backdrop of changing climate. In the face of these challenges and changes, your new knowledge and understanding of the Earth will help you make better decisions for you, your family, your community and the world, and thus serve you (and those around you) for years to come, wherever your career leads you.

Disability Statement: If you have a physical, learning, sensory or psychological disability and require accommodations, please let us know as soon as possible. You will need to register with (and provide documentation of your disability to) University Disability Support Services (UDSS) in SEO, room 330 Knight Hall.

Text, Lab Manual, Online Components and CPS system: You should read all of the assigned readings (see schedule) before class, so that you are adequately prepared for lecture and laboratory discussions. There will be 10 quizzes on the readings over the semester. Please be aware that we may not always have time in class to cover all of the material in the assigned readings. **You may nevertheless be held responsible (on labs, quizzes, and tests) for assigned reading material that we don't cover in class.**

Required purchases for this course:

- 1) *Earth: Portrait of a Planet*, Stephen Marshak (2008) 3rd Ed. \$124 new, \$87 used at the University Bookstore
- 2) Lab manual, assembled by Dr. Campbell-Stone; \$9 at the University Bookstore
- 3) This course uses a Classroom Performance System (CPS) so you will need to purchase a **CPS_{RF} response pad** (a.k.a. "clicker" for \$24 at the University Bookstore) and register it over the internet (\$12 activation fee) at <http://eInstruction.com>. **NOTE: Students who register their CPS response pads and join this course by January 22 will receive 10 extra-credit points.** The CPS is a crucial element of this course. We use it to monitor your attendance and participation and to gauge your understanding of lectures. **To be properly counted for your attendance grade, you must bring your clicker to every lecture! Students are responsible for making sure their clickers work!** We recommend that you keep a set of fresh, spare batteries with your unit at all times. Instructions for registering your clicker can be found on the course website: <http://geoweb.gg.uwyo.edu/geol1100/>. Our class registration key is **H57105J526**. **Bring your clicker to your 1st lab.** After that you need only bring it to lecture.

Recommended purchase for those who plan to major in geology:

Dictionary of Geology & Mineralogy (Paperback) McGraw-Hill. \$15 at Amazon.

Online Materials: This course is lecture-driven with a hands-on lab component. However, it also has 3 online components:

- 1) We will post your grades and administer **reading quizzes (worth 10% of your grade) on WyoSakai. To participate, you must go to <http://wyoakai.uwyo.edu>, create a WyoSakai account, and then join this course.** From the main Wyosakai page, click "[I'm a new user, sign me up!](#)" and follow instructions from there. You will then need to add this course to your account. **You must register by January 22 to participate in the first reading quiz!**
- 2) Handouts, announcements, and links will be available on our main course website: <http://geoweb.gg.uwyo.edu/geol1100/>. This site is hosted on a Geology and Geophysics webserver and will be our main mechanism for disseminating information to you. We recommend that you check it daily for updates.
- 3) Our lecture hall (room 129 in the Classroom Building) is in the WyoCast system, so each class will be recorded on video (and audio) for later review by students at <http://wyocast.uwyo.edu>. To view a lecture: 1) click "login" at the top left of the page; 2) enter your email password and ID; 3) click on "Spring 2010" in the directory window; and 4) select the folder labeled GEOL1100 and then pick the lecture you want to view. We strongly recommend that you resist the urge to skip class and simply watch lecture online. **WyoCast is meant to aid your comprehension of lectures and should not be used as a substitute for attendance.** Rather, its best uses are for review of lectures on complicated topics and for students who legitimately can't make it to class due to illness, inclement weather, or University-sponsored excuse. Note: If you do not show up at lecture often enough, you will not receive any of the available attendance/participation points (see details below). Also please note that the instructors are not responsible for any malfunctions or problems with WyoCast. To the contrary, if you don't come to lecture and cannot view the lecture online due to some technical difficulty, **you, the student**, are still responsible for understanding any material we cover in class.

Course Requirements, Assignments and Grading Standards: This course requires learning facts and concepts. You will be tested (and graded) on your comprehension of readings and lecture materials in ten reading quizzes, two 50 minute exams and one 2 hour final exam (see schedule). The online quizzes will be announced one week prior to the due date. Attendance and participation will be recorded with the CPS response clickers. One half of the lab component of your grade will be based on quizzes related to the last week’s lab, as a check on your comprehension of the material. Grading for the course will be on a standard percentage scale (90s = A, 80s = B, 70s = C, 60s = D) unless the average score for the whole course is less than 75%, in which case a “curve” *may* be introduced at the end of the semester. Individual exams will not be “curved.” The instructors reserve the right to change the grading policy in extenuating circumstances. The relative importance of each component of your grade is as follows:

Graded Performances	Available Points
lab assignments (13 @15 pts each)	195
lab quizzes (13 @15 pts each)	195
attendance & participation at lecture	10
reading quizzes (10 @10 pts each)	100
test 1	125
test 2	125
final exam	250
Total	1000

The attendance and participation portion of your grade will be awarded as follows: if you attend and participate in more than 80% of the lectures, you will receive all 10 of the available points. If your attendance or participation at lecture amounts to less than 80%, you will receive 0 of the available 10 points.

Excused Absences and Policy on Late Homework: University-sponsored absences are cleared through the Office of Student Life. *The policy for make-up tests and late lab assignments is as follows:* Make-up dates for tests are not part of the schedule, and, if necessary (due to University-sponsored absences only), should be arranged in advance and must occur within one week of a student’s return from an excused absence. To receive credit, students must complete all make-up work by the last day of class. **It is the student’s responsibility to approach the instructor to request a make-up exam.**

Conduct: University Regulation 29, change 1, states that the instructor can “establish reasonable standards of conduct”... “which should be made known at the outset” of each course. *In this course the standard of conduct is as follows:* We expect regular attendance & participation and respectful interactions at each meeting. That means no sleeping, iPods, video games, and/or networking/texting/talking on phones, PDAs, PPCs, PCs, Macs, facebook, myspace, or anything else in class. We expect you to show respect to your fellow students and the instructors by refraining from talking during class. If you fail to meet these standards of conduct we will ask you to leave the lecture hall. Please read the following document on the web:

http://uwadmnweb.uwyo.edu/a&s/Current/students_teachers_work.htm

It has guidelines for syllabi, attendance, classroom deportment, phone and email protocol, office hours, and how to make appointments outside of office hours. Additional regulations can be viewed on the Office of the General Counsel website: <http://www.uwyo.edu/generalcounsel/>.

Academic Honesty: University Regulation 6-802, revision 2, defines academic dishonesty as “an act attempted or performed which misrepresents one’s involvement in an academic task in any way, or permits another student to misrepresent the latter’s involvement in an academic task by assisting the misrepresentation.” This pertains to aid from classmates as well as former students of the class and anyone else. *Note that it also pertains to students who witness acts of academic dishonesty; by failing to inform the instructors of such a witnessed act, the witness is guilty of assisting in the act.* UW has well-defined procedures for judging cases of suspected academic dishonesty, and serious penalties may be

assessed to offenders. Please do not cheat and avoid any behavior that might be misconstrued as cheating. Note this means that the work you turn in must always be your own. ***If we catch you with more than one clicker in class we will treat it as an act of academic dishonesty and you will receive a score of zero for the attendance/participation part of your grade.*** Note also that use of calculators, phones, PDAs, PPCs and anything else that gives you an unfair edge over your classmates is prohibited during tests and quizzes.

Contacting the Instructors and E-mail Policy: Contact your TA with questions about labs. Contact Dr. Riebe and Dr. Swapp for information about tests, quizzes, lectures and the structure of the course.

The most effective way to contact us with simple questions is by E-mail. We will respond as quickly as possible, but it may take us up to 24 hrs on weekdays or 48 hrs on weekend to get back to you. In any case, do not wait until the last minute to ask us a question! For example, do not expect a response if you send us a question at 11 PM about a test the next day! We expect your questions to be coherently written, with correct spelling and good grammar. We don't have time to interpret messages written in shorthand with excessive abbreviations. If you have a complicated question, it may be best for all if you come see us in office hours, call us on the phone, or come talk to one of us after class.

From time to time throughout this course, we will use e-mail to contact you at your uwyo.edu address with organizational information and announcements. Hence it is very important for you to check your email regularly; we suggest that you check it at least once per day.

Changes in the Syllabus: The instructors reserve the right to make changes to the syllabus (especially the schedule and the readings) as the course proceeds. Such changes will be announced in class with plenty of lead time for you to adjust. Substantive changes to the syllabus shall be communicated by E-mail. **Please check the course website (<http://geoweb.gg.uwyo.edu/geol1100/>) often for updates to the “live” version of the schedule.**

Tentative Schedule (MWF 10:00-10:50 AM; RM 129 Classroom Bldg.):

Week	Day	Date	Topic	Reading
1	M	11-Jan	Why Geology?	
1	W	13-Jan	Big Bang to Big Universe	Ch 1
1	F	15-Jan	The Anatomy of Earth	Ch 2
2	M	18-Jan	<i>no class: University Holiday</i>	
2	W	20-Jan	Geologic Time: It's all Relative	Ch 12.1-12.7
2	F	22-Jan	Geologic Time: It's Absolute	Ch 12.8-12.10, Ch 13
3	M	25-Jan	Drifting Continents and Spreading Seas	Ch 3, Interlude A
3	W	27-Jan	The Way Earth Works: Plate Tectonics	Ch 4
3	F	29-Jan	Patterns in Nature: Minerals 1	Ch 5
4	M	1-Feb	Patterns in Nature: Minerals 2	Ch 5
4	W	3-Feb	Up from the Inferno: Magmas and Igneous Rx 1	Interlude B, Ch 6
4	F	5-Feb	Up from the Inferno: Magmas and Igneous Rx 2	Ch 6
5	M	8-Feb	Volcanic Landscapes and Processes 1	Ch 9
5	W	10-Feb	Volcanic Landscapes and Processes 2	Ch 9
5	F	12-Feb	LECTURE EXAM 1	
6	M	15-Feb	Weathering: Where Water and Rock Meet	Ch 7.1-7.4
6	W	17-Feb	Sedimentary Rocks 1	Ch 7.5-7.8
6	F	19-Feb	Sedimentary Rocks 2	Ch 7.9-7.11
7	M	22-Feb	Metamorphic Rocks 1	Ch 8
7	W	24-Feb	Metamorphic Rocks 2	Ch 8
7	F	26-Feb	The Rock Cycle	Interlude C
8	M	1-Mar	Earthquakes 1	Ch 10
8	W	3-Mar	Earthquakes 2	Ch 10
8	F	5-Mar	Earthquakes 3	Interlude D
9	M	8-Mar	Structural geology 1	Ch 11
9	W	10-Mar	Structural geology 2	Ch 11
9	F	12-Mar	Structural geology 3	Ch 11
10	M	15-Mar	<i>no class: Spring Break</i>	<i>recommend: Ch 14&15</i>
10	W	17-Mar	<i>no class: Spring Break</i>	<i>recommend: Ch 14&15</i>
10	F	19-Mar	<i>no class: Spring Break</i>	<i>recommend: Ch 14&15</i>
11	M	22-Mar	Landscapes, Water and the Hydrologic Cycle	Ch 15; Interlude F, and p. 803 (Box 23.1)
11	W	24-Mar	Landslides and Mass Movements	Ch 16
11	F	26-Mar	LECTURE EXAM 2	
12	M	29-Mar	The Anatomy of Rivers	Ch 17.1-17.7
12	W	31-Mar	Rainfall, Runoff and Flooding Hazards	Ch 17.8-17.9
12	F	2-Apr	<i>no class: University Holiday</i>	
13	M	5-Apr	Glaciers and Glacial Landscapes	Ch 22.1-22.6
13	W	7-Apr	Groundwater	Ch 19
13	F	9-Apr	Oceans: The Great Conveyors of Nutrients and Heat	Ch 18.1-18.3, 18.6-18.8

Week	Day	Date	Topic	Reading
14	M	12-Apr	Waves, Tides and Tsunamis	Ch 18.4-18.5, plus Ch 10 (pp. 335-339 only)
14	W	14-Apr	Our Atmosphere: an Envelope of Gas	Ch 20.1-20.4, 20.7
14	F	16-Apr	A Primer on Feedbacks and Systems	handouts
15	M	19-Apr	A Geological Perspective on Global Change Pt. 1	Ch 13 (redux)
15	W	21-Apr	A Geological Perspective on Global Change Pt. 2	Ch 23.1-23.5
15	F	23-Apr	Pleistocene Glaciations: Orbital Forcing of Climate	Ch 22.7-22.9
16	M	26-Apr	The Global Greenhouse: Welcome to the Anthropocene	p. 822-830
16	W	28-Apr	Human Impacts on the Earth System	p. 819-822; Ch 23.7
16	F	30-Apr	Review for Final	
17	M	3-May	Final Exam (Comprehensive) administered from 10:15-12:15 in a location to be determined by the University	

Note: Final exam timing is dictated by the University: <http://uwadmweb.uwyo.edu/registrar/Spring2010/sp10final.pdf>. Students who have two final exams at the same time or more than two final exams in one day and who wish to ask for an exception must complete the Final Exam Conflict form (available from the Office of the Registrar) no later than April 27. **If you can't take the final at the appointed time for some other reason, you should drop the class.** A document identifying exam rooms will be published approximately 30 days prior to the first day of final exams.