

GENERAL GEOLOGY LABORATORY - COURSE # [72097](#)

3 Laboratory Hours, 1 Unit Letter Grade, Student may petition for Credit/No Credit

PREREQUISITES ADVISORY: Completion of GEOL 100 and ENGL 056, with a grade of "C" or better, or equivalent, or Assessment Skill Level R5.

MEETING TIME/PLACE: January 27 to May 18 - Fridays 9:00 am – 12:10 pm -- Room H314

INSTRUCTOR: Ray Rector

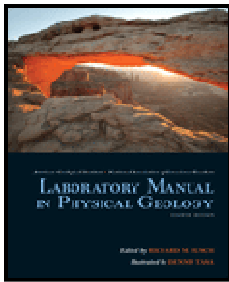
CONTACT: phone# -760-942-9201, e-mail – geoprof@terrasonics.com

OFFICE HOURS: Fridays 12:10 pm to 1:00 pm – Room H314

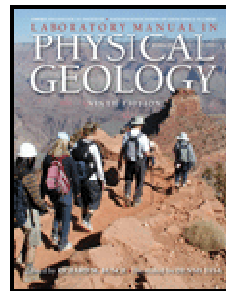
CLASSROOM WEB SITE: <http://www.terrasonics.com/> Click the “Mesa Geo101 Lab” link

REQUIRED TEXT: **Laboratory Manual in Physical Geology - 8th or 9th Edition**

Editors: AGI and NAGT; 8th Edition: ISBN10: 0136007716; 9th Edition: ISBN10: 0321689577



[8th Edition Cover](#)



[9th Edition Cover](#)

COURSE DESCRIPTION: This laboratory course covers mineral and rock identification, landforms, topographic/geologic map interpretation, and geologic structures. The course is designed to supplement Geology 100 with laboratory experience. (FT). Associate Degree Credit & transfer to CSU and/or private colleges and universities. UC Transfer Course List. CAN GEOL 2 = GEOL 100 + GEOL 101 (City, Mesa, Miramar).

STUDENT LEARNING OBJECTIVES: Upon completion of this course, students should be able to:

- 1) Appreciate the methods and limitations of scientific investigations of the Earth;
- 2) Distinguish between science and pseudo science;
- 3) Identify, name, and classify the most common minerals and rock types (Learning Outcome #1)
- 4) Apply stratigraphic principles to determine the age sequence of a set of rocks layers (Learning Outcome #2);
- 5) Read and interpret a topographic map for point location, point-to-point direction, topographic relief, and slope, including recognizing topographic features such as peaks, basins, ridges and valleys (Learning Outcome #3);
- 6) Describe and classify the various types of folds and faults, and explain their origin in terms of crustal forces and plate tectonic processes (Learning Outcome #4);
- 7) Locate, describe and classify the global-scale crustal features of Earth, and explain the origin of those structures in terms of plate tectonic principles and processes;
- 8) List and describe the major types of geologic hazards, and explain both their origin and means of hazard mitigation.

STUDENT LEARNING OUTCOMES: Upon completion of this course, students should be able to:

- 1) Survey of Rocks and Minerals:** Correctly classify a set of twelve hand-specimen rocks into the 3 major rock groups and correctly identify the most abundant mineral in each sample.
- 2) Geologic Time Literacy:** Determine the proper age sequence of a set of ten rock formations and two faults within a geologic cross section diagram, using Steno's principles of stratigraphy;
- 3) Topographic Maps and Spatial Literacy:** Correctly interpret a topographic profile for a line transect drawn across a topographic map, including the location of ridges, peaks, and valleys;
- 4) Structural Geology & Geologic Map Literacy:** Correctly interpret the ancient crustal stress regime (type and direction) that produced a given sets of faults and/or folds illustrated on a geology map.

ACCOMMODATION OF DISABILITY:

A student with a verified disability may be entitled to appropriate academic accommodations, including the assistance of a note-taker in the classroom, and/or extended time for taking exams. Students with disabilities who may need academic accommodations should notify their professor immediately. For further information, please contact the Disabled Students Program and Services (DSPS) Office.

CLASS ENROLLMENT NOTES:

It is the student's responsibility to add, drop, or withdraw from classes before the deadlines stated in the class schedule. Petitions to add, drop, or withdraw after the deadline will not be approved without written proof of circumstances beyond the student's control, which made her/him unable to meet the deadline. Lack of money to pay fees is not considered an extenuating circumstance. Students anticipating difficulty in paying fees before the deadline should check with the Financial Aid Office about sources of funds or other alternatives for which they may be eligible. If you decide to withdraw from this course, you are reminded to do so before the 3rd of February (last day to withdraw without a "W"); and the 30th of March (last day to withdraw with a "W"). If you fail to withdraw by 3/30/12 and you stop participating in class, then a final grade must be assigned to you. It is the student's responsibility to drop all classes in which he/she is no longer participating (for online classes). It is the student's responsibility to drop all classes in which he/she is no longer attending (for on campus classes). It is at the instructor's discretion to withdraw a student after the add/drop deadline (include date) due to excessive absences (missing 3 or more labs). Students, who remain enrolled in a class beyond the published withdrawal deadline, as stated in the class schedule, will receive an evaluative letter grade in this class.

STATEMENT OF RETENTION: Students, please discuss your plans to withdraw from class with your instructors. They may have options for you that may allow you to continue in class.

INSTRUCTOR'S ATTENDANCE AND ENROLLMENT POLICY:

Attendance is critical to teaching and learning in this lab class, and it is mandatory. You will most likely fall behind in acquiring course content, vocabulary, concepts, and skills if you do not attend class regularly. I realize that situations can arise that are beyond your control, which could interfere with attending this class. Attendance is taken every class meeting by means of a sign-up sheet that will be passed around at the beginning of each class. You are required to attend the entire scheduled lab meeting, unless I excuse you early. Note that it is your responsibility to 1) sign in, and 2) attend the entire scheduled lab meeting, in order to receive lab attendance credit for that class meeting.

It will be up to you for staying up with lab assignments and exams. Make sure and consult the schedule, lab manual, class notes, classroom website, and fellow classmates about the material that was missed during absences. There is no make-up or rescheduling of either labs or lab exams unless the student provides proof of some compelling reason for the make-up. It is the student's responsibility to contact me to forewarn me of any problem in either, attending the regular-scheduled labs and exams, or completing the lab write-ups by the due date. Business, pleasure, or being generally ill, is not a compelling reason - being horribly sick, or having a death in the family is.

CLASSROOM BEHAVIOR AND STUDENT CODE OF CONDUCT:

Students are expected to respect and obey standards of student conduct while in class and on campus. The student Code of Conduct, disciplinary procedure, and student due process (Policy 3100) can be found at the Office of the Vice President of Student Services. Charges of misconduct and disciplinary sanctions may be imposed upon students who violate these standards of conduct or provisions of college regulations. As your instructor, I have the following expectations of your behavior in this class:

- 1) Promote a positive learning environment by exhibiting mutual respect and consideration of the feelings, ideas, and contributions of others.
- 2) Demonstrate a genuine desire to learn, interact, and improve.
- 3) Demonstrate respect for furniture, tools, equipment, and supplies in the classroom.
- 4) Clean up after yourself.
- 5) No eating in class – drinks are OK, but must be stored in sealable containers.
- 6) All cell phones, pagers, and audio players must remain turned off, or in silent mode. Active use of a cell phone or audio player in the classroom during class time is prohibited.
- 7) This class will be conducted in accordance with the college code of student conduct and basic standards of academic honesty. Cheating, plagiarism, or other forms of academic dishonesty are totally unacceptable and will not be tolerated. Violations of standards of academic honesty will be reported to the school dean for appropriate action. A full explanation of my plagiarism policy is found on the classroom website at <http://www.terrasonics.com/plagiarism.htm>

GRADING/EVALUATION

- I. 12 Laboratory Assignments – 30 points each
- II. Mid-term and Final Exams - 120 points each
- III. Late lab assignments are not accepted – no exceptions.
- IV. Missed labs due to absence receive zero points. No post-lab make-ups allowed.
- V. **One** of the 12 laboratory assignment grades (**lowest grade**) will be **thrown out**.
- VI. Voluntary field trip extra credit not to exceed 50 points
- VII. Total points used to calculate grade = 570 points

- VIII. **Grading Scale:**
100% – 90% = 580 - 510 points = A
89% -- 80% = 509 - 450 points = B
79% -- 70% = 449 - 390 points = C
69% -- 55% = 391 – 300 points = D

REQUIRED LAB MATERIALS

The following are required lab supplies (by second class meeting) that you will need for all labs during the semester: geology lab text manual (at bookstore or online), #2 pencils with erasers, calculator, and a clipboard (recommended) for field trips. Please, use only a pencil in lab!

Laboratory Worksheets: Students need to make a printed copy of each week's lab worksheet, and bring that with you to the lab. Worksheets are found at: http://www.terrasonics.com/index_mesa.html

LAB PROCEDURES:

I. BEFORE THE LAB: You must be prepared prior to coming to each geology lab.

- 1) Read (several times) the lab exercise worksheet, and the corresponding chapter in the lab text manual.
- 2) Do the **Pre-lab** exercises (if applicable) before you come to class. Pre-labs are checked off by the instructor at the **beginning** of the lab meeting for credit.
- 3) I strongly encourage you to wear closed-toed shoes to the mineral and rock labs.

II. DURING THE LAB: A brief lecture about the lab by the instructor will help to explain some of the activities that you will complete in the lab. Additionally, make note of the following 6 points:

- 1) Be prepared by reading the lab and becoming familiar with it before we start.
- 2) Do not disrupt other lab groups by excessive off-topic talking, socializing, etc.
- 3) You may work with lab partners in groups of up to 3 or 4 (not any larger groups, please).
- 4) You must have your own lab notebook and worksheet, no sharing.
- 5) You may not split labs among lab partners and recombine the parts later. In other words, you must complete the entire lab as a group.
- 6) Please turn off your cell phone unless you are expecting an emergency.

III. AT THE END OF THE LAB: You have successfully finished the lab when:

- 1) Your group has fully completed ALL the required lab exercises.
- 2) You have written your own personal lab reflection.
- 3) You turned in your completed, properly COLLATED and STAPLED lab WITH your *written reflection*.
- 4) Points will be deducted from your lab work for being disruptive, coming to lab late, not being prepared, or incomplete and/or unsatisfactory work.

REQUIRED GEOLOGY LABORATORY HAND-IN WORK

Students should obtain a 3-ring binder notebook to compile your laboratory coursework, which will include the following work for each week's lab:

1) Your **completed lab worksheets** for that week's exercise. (28 points possible)

2) **A written summary/reflection** (120 word minimum) of the lab activity, explaining its purpose, the methods used, the results obtained, and a brief personal reflection of what you enjoyed and learned about doing this lab (3 points possible). Answer the following 3-point question reflection set for EVERY single lab meeting, including the fieldtrips:

- 1) *What was the purpose of this lab? What did you actually discover and learn during this lab?*
- 2) *What did you enjoy most about this lab? Also, what was challenging or thought-provoking?*
- 3) *What are your constructive comments about the design and execution of this lab? What's good? What's bad? Also, how might it be made better?*

MANDATORY FIELD TRIPS

There are two mandatory field trips that place during the scheduled classroom lab meeting time for this semester (Friday 9am to 12pm). These field trips are both held at the beach, and require self-transportation. We will meet at the beach - not at the classroom. Make sure to bring the worksheet, a clipboard, writing equipment, proper beach attire (what you would normally wear when you spend a day at the beach), water, sunscreen, Frisbee, surfboard, etc. The trip will finish by 11:50 am.

More trip information and directions are found at the instructor's website.

- 1) Weekend field trip #1: Friday, March 23 – Scripps Beach, 9:15 am
- 2) Weekend field trip #2: Friday, May 4 – Tourmaline Beach, 9:15 am

VOLUNTARY WEEKEND FIELD TRIPS

Five weekend field trips are tentatively planned for this semester. These field trips are totally voluntary and earn you extra credit points! Check the professor's classroom web page for details.

- 1) Weekend field trip #1: Saturday, February 11 – Torrey Pines Beach, 9:00 am
- 2) Weekend field trip #2: Saturday, March 10 - Blacks Beach, 9:00 am
- 3) Weekend field trip #3: Saturday, April 7 - Moonlight Beach, 9:00 am
- 4) Weekend field trip #5: Saturday and Sunday, April 28 & 29 – San Diego Backcountry
Note: *This fieldtrip is an overnight camping trip in the desert.*
- 5) Weekend field trip #4: Sunday, May 7 – Birch Aquarium, 9:00 am

The admission fee is \$8 (with a student ID) for the Birch Aquarium.

- Extra credit and/or excessive absence make-up will be awarded for participating on these trips.
- Experience gained on fieldtrips greatly helps in understanding the laboratory material and concepts.
- Field trips are really fun and a great way to better know your classmates and instructor.
- Coastal fieldtrips are worth 10 points each, and the 2-day overnighter is worth up to 40 points.