Geology 101 Syllabus Summer 2023 San Diego Mesa College

GENERAL GEOLOGY LABORATORY – COURSE# 30765

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.

CREDIT TRANSFERABILITY: Credit - Degree Applicable; Transfer Credit: UC, CSU; CSU GE: B3. Laboratory Activity; DIST GE: B2. Physical Sciences; IGETC: 5C. Laboratory Activity

MEETING TIME/PLACE: June 21 to August 9 – Mondays and Wednesdays 2:00pm - 5:20pm - Rm MS110

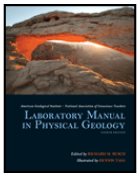
INSTRUCTOR: Ray Rector

CONTACT: E-mail – **geoprof@geoscirocks.com** **OFFICE HOURS:** By Appointment

CLASSROOM CANVAS: https://sdccd.instructure.com/login/canvas

POFESSOR'S WEB SITE: http://www.geoscirocks.com/ Click the "Mesa Geo101 Lab" link

NO TEXTBOOK PURCHASE REQUIRED: In-Lab Textbook: Laboratory Manual in Physical Geology - 8th Editors: AGI and NAGT; 8th Edition: ISBN10: 0136007716;



IMPORTANT NOTE ABOUT THE LAB MANUAL: a free, in-lab, loaner copy of the above laboratory manual will be available for use for every student during lab time but cannot be taken out of the lab room. This lab manual is not sold in the campus bookstore. However, you can purchase this lab manual online from textbook vending companies.

COURSE DESCRIPTION: This laboratory course covers plate tectonics, 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).

COURSE LEARNING OUTCOMES:

1) Students will display the ability to use proportional reasoning and graphical analysis to establish and analyze relationships between measured quantities. (Critical Thinking)
2) Students will display the ability to clearly communicate scientific principles, experimental results, and their implications. (Communication)
3) Students will display the ability to apply conceptual and mathematical tools to correctly predict the future state of physical systems. (Problem Solving)

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

1) Understand 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;
4) Apply stratigraphic principles to determine the age sequence of a set of rocks layers;
5) Read and interpret topographic maps for point location, point-to-point direction, topographic relief and slope, and recognizing topographic features such as peaks, basins, ridges and valleys;
6) Describe and classify the various types of folds and faults, and explain their origin in terms of crustal forces and plate tectonic processes;
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.

ACCOMMODATION OF DISABILITY: A student with a verified disability may be entitled to appropriate academic accommodation, 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 Disability Support Program and Services (DSPS).

CLASS ATTENDANCE, AND ENROLLMENT NOTES, AND DEADLINES: ALL STUDENTS registered in this course prior to the start date MUST sign-in into the official Canvas course page sometime on or before the end of the 4th DAY of classes on the first week of the semester – Friday, June 23, 2023, in order to stay registered in the course. If you do not log by the above date, then I will drop you and give your seat to a waitlisted student. The last day to withdraw with a refund and with no grade (no "W" placed on permanent record.) is Tuesday, June 27, 2023. The deadline to file a petition for PASS/NO PASS grade option is Friday, July 21, 2023. The very last day to drop a class with a "W" is Friday, July 21, 2023, (the official withdrawal deadline). If you fail to withdraw by 7/21/23 and/or stop participating in class, then a final grade must be assigned to you. 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 difficultly 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. It is the student's responsibility to drop all classes in which he/she is no longer attending (for on campus classes. Students, who remain enrolled in a class beyond the published withdrawal deadline, as stated above (as listed in the official class schedule) will receive an evaluative letter grade in this class.

STATEMENT OF RETENTION: Students, please discuss your plans to withdraw from class with me your lab instructor. 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 responsible for signing the attendance sheet every class meeting that you attend. You are also required to attend the entire scheduled lab meeting, unless I excuse you early. A student may be dropped from this course for excessive absences (exceeding 5 missed course meetings).

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 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.

LABORATORY SAFETY RULES: The following safety rules must be followed <u>at all times</u> while in lab:

1) No food or any sort of drink in the lab allowed in lab at any time. Drinks can be stored outside of lab.

2) Everyone is required to wear closed-toed shoes while in lab – no exceptions. Any student who shows up without closed-toed shoes on will not get credit for that day's laboratory work.

3) Any/all lab accidents, injuries, or unsafe medical/health conditions/events, however minor, must be reported to the lab instructor immediately.

4) Only authorized lab experiments or procedures can be performed. All authorized experiments or procedures must be performed as described and/or demonstrated by the laboratory instructor.

5) Personal belongings need to be stored in a place that will not impede students' movement in and around the lab, nor clutter lab table space.

6) When the fire alarm goes off, everyone must leave the lab room immediately - in a calm orderly fashion - to the designated outside emergency assembly area. Know where the assembly area is located.

7) When using liquid 1% hydrochloric acid for acid testing mineral and rock samples, use only a small amount (1 drop) of acid, and be careful to not to get the acid on your skin or clothing. After the acid test is finished, samples must be wiped dry with a paper towel. When not in use, acid testing bottles must be stored in their proper acid bottle caddy. Safety goggles MUST always be worn when handling the acid.

8) Be very careful when handling and transporting rock and mineral hand samples. Mineral and rock hand samples can be heavy and/or have potentially sharp edges. The potential for dropping a sample on the foot or cutting oneself on a sample is there.

9) When performing hardness tests on mineral and rock samples, students must be very careful not to jab/prick themselves when using sharp testing items, like nails or knives. Also, when using a glass or porcelain plate during hardness testing, make sure that the plate is held down on the lab table, and not held in your hand while performing the scratch test.

GRADING/EVALUATION:

I. 13 Laboratory Assignments: 30 points each; Mid-term and Final Exams: 100 points each
II. Late lab assignments are not accepted – no exceptions.
III. Missed labs due to absence receive zero points. No post-lab make-ups allowed.
IV. **One** of the 13 laboratory assignment grades (**lowest grade**) will be **thrown out**.
V. Extra credit not to exceed 30 points.
VI. Total possible points used to calculate grade = 12 x 30 (labs) + 2 x 100 (exams) = 560 points
VII. Final course grade is based purely on total earned points divided by total possible points.
VIII. **Grading Scale:** 100% – 90% = A
89% -- 80% = B
79% -- 70% = C
69% -- 55% = D
< 55% = F

REQUIRED LAB MATERIALS: *The following are required lab supplies (by second class meeting) that you will need for all labs during the semester: several #2 pencils with erasers, calculator, and a clipboard (recommended) for field trips. Please, use only a pencil in lab!* NOTE: a free copy of the laboratory manual will be available to every student for use during lab time, but cannot be taken out of the lab room.

Laboratory Worksheet Sets: Students are **required** to make a printed hardcopy of each week's lab worksheet set PRIOR to the scheduled lab meeting day, and bring that with you to the lab. Download the worksheets from the Canvas course home page. **Note** that most labs have a written PRELAB activity (included in the lab worksheet) that must be completed PRIOR to the lab start time. Also note that is advised to print out a color copy if there are colored pages.

LAB PROCEDURES:

I. Before the Lab: You must be prepared prior to coming to each geology lab.

1) Print Out and 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: When your group has completed the lab exercise, turn in your completed, properly COLLATED and STAPLED lab WITH your *written reflection*. Points will be deducted for being disruptive, coming to lab late, or incomplete and/or unsatisfactory work.

GEOLOGY LABORATORY HAND-IN WORK

You should retain your laboratory coursework for exam study and safe-keeping, which will include the following work for each week's lab:

1) Your completed lab worksheets for that week's exercise. (*25 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*). Compose responses to the following 6-point question reflection set.

1) What was the purpose of this lab?
2) What did you actually discover and learn during this lab?
3) What did you find interesting and/or enjoyable about this lab?
4) What did you find challenging or thought-provoking about this lab?
5) What are your constructive comments about the design and execution of this lab? What's good? What's bad?
6) How could this lab be improved? Provide some constructive suggestions.

Course Schedule on next page

Mesa Geology 101 Wednesday Laboratory Schedule – Summer 2023

Week/Day	Class Meeting Lecture and Discussion Topics	Location and Time
Week 1 Wed 6/21	LAB 1 – The Scientific Method and Unit Conversions	MS110 @ 2:20 pm
Week 2 Mon 6/26	LAB 2 – Plate Tectonics – *Plate Boundaries and Motion*	MS110 @ 2:20 pm
Wed 6/28	LAB 3 – Minerals - *Classification and Properties*	MS110 @ 2:20 pm
Week 3 Mon 7/3	LAB 4 – Igneous Rocks – *Classification, Properties, & ID*	MS110 @ 2:20 pm
Wed 7/5	LAB 5 – Sedimentary Rocks - *Classification, Properties, & ID*	MS110 @ 2:20 pm
Week 4 Mon 7/10	LAB 6 – Metamorphic Rocks - *Classification, Properties, & ID*	MS110 @ 2:20 pm
Wed 7/12	LAB 7 – Midterm Exam Preparation Lab	MS110 @ 2:20 pm
Week 5 Mon 7/17	**Midterm Exam** - *Isostasy, Tectonics, Minerals and Rocks*	MS110 @ 2:20pm
Wed 7/19	LAB 8 – Geologic Dating - *Stratigraphic Principals and Fossils*	MS110 @ 2:20 pm
Week 6 Mon 7/24	LAB 9 - Topographic Maps - *Concepts, Analyses, and Uses*	MS110 @ 2:20 pm
Wed 7/26	LAB 10 - Earthquakes - *Concepts, Measuring, and Hazards*	MS110 @ 2:20 pm
Week 7 Mon 7/31	LAB 11 – Structural Geology – *Identifying Folds and Faults*	MS110 @ 2:20 pm
Wed 8/2	LAB 12 – Geology Maps - *Concepts, Analyses, and Uses*	MS110 @ 2:20 pm
Week 8 Mon 8/7	LAB 13 – Final Exam Preparation Lab	MS110 @ 2:20 pm
Wed 8/9	**Final Exam** – *Dating, EQ's, Structure & Geology Maps*	MS110 @ 2:20 pm

Please Note: This schedule is tentative and may be modified by the instructor at anytime during the semester.