GEOLOGY 10 Introductory Geology

Lectures: Mon and Wed, 9:30am -11:20am, S-15
Labs: Mon and Wed, 11:30am -12:45pm, S-15

Marek Cichanski
Office: S-15a
cichanskimarek@fhda.edu
(408) 864-8664
Office Hours: Mon 4:00 – 5:00pm, Tue 1:00 – 3:00pm, Wed 4:00 – 5:00 pm

Everything you need to know about this class – i.e. the same information as in this syllabus, AND MORE – can be found on the CLASS CANVAS WEBSITE at:

https://deanza.instructure.com/courses/45738

Make sure to bookmark it and refer to it whenever you have questions!

Textbooks:

For Lecture:
Free online textbook: https://opengeology.org/textbook/

For Lab:
Get a new copy of the Geology 10 Laboratory Manual by Hay, Harding, and Cichanski from the De Anza Campus Bookstore.

Our Goals This Quarter:

You'll be learning a lot about how the Earth works this quarter. You'll also learn a lot about how a large college course like this works. Here are some specific things I want to help you do; I hope that doing these things enables you to become a more scientifically aware citizen, and gets you excited about science no matter what your eventual path in life!

1. When someone proposes a *hypothesis* as to how the Earth works, *evaluate* that hypothesis using something called the *scientific method* – this is a way of thinking about the world, which minimizes the chances of getting fooled.
2. The Earth is an ever-changing system, and it's a good idea to be able to track those changes, and to *predict* future changes, using data and observations.
3. Changes in the outer part of the Earth (which we refer to using terms like *crust* and *lithosphere*) aren't just about making predictions, they're also about *determining geologic history*. As a geologically literate person, you'll want to be able to do this by examining the world at a variety of scales, from rocks that would fit in your hand to maps and datasets covering large regions of the Earth.
4. As a scientifically knowledgeable citizen, it is desirable for you to be able to analyze the *impact* that the Earth has on humanity; this includes both natural hazards and the availability, use, and distribution of the Earth's resources.

There's a technical name for those goals I described above – they're called the:

Student Learning Outcomes

Here's the official list… but they're basically the same things I listed under "Our Goals This Quarter":

- Apply the principles of scientific methodology to evaluate hypotheses on how the Earth works as an integrated system.
- Use data and observations to track and predict changes in the Earth system resulting from dynamic Earth processes.
- Use observations from the crust and lithosphere of the Earth to determine geologic history at hand-sample, outcrop, local, and regional scales.
- Apply scientific methodology and geologic principles to analyze the impact of the Earth system on humanity, from specific natural hazards and the availability, use, and distribution of Earth resources.

GRADING

Step 1:

You take various tests and quizzes, do in-class "voting" questions, and take the final exam.

Test 1	200pts
Test 2	200 pts
Test 3	200 pts
Lab Quiz 1	100 pts
Lab Quiz 2	100 pts
Lab Quiz 3	100 pts
Voting Q's	80 pts
FINAL EXAM	400 pts

Step 2:

I drop the lowest midterm, the lowest lab quiz, and the lowest 5 voting questions.

-200 pts = **400 pts of midterms**

-100 pts = **200 pts of lab quizzes**

-10 pts = **70 pts of voting Q's**

There's no way I'm gonna drop **this** one…

Step 3:

I calculate the final grade.

Your final percentage =

The points you earned, after dropping lowest scores as described at left

DIVIDED BY…

1070 possible points

I then round your final percentage to the nearest whole percent, and use the following grading scale:

90-100	A
80-89	B
70-79	C
60-69	D
<60	F

Notes:

1. A percentage like 89.7% rounds to 90, so it's an A.
2. If your final percentage is in a "grey area", such as 89.3%, I'll evaluate your field trip write-up, to decide whether or not to `bump you up'.
3. If something causes you to miss a test or quiz, that will be the one you drop.
4. If you miss some lecture and/or lab sessions, thus missing some in-class voting questions, those will be included in the dropped voting questions.
5. I'm afraid my schedule won't allow me to give you a final at a different time in order to fit your vacation. You'll need to plan around the final – *you may want to tell family members about this before they buy non-refundable plane tickets.*

Geology 10 Class Rules and Guidelines

During the first few weeks of class, I will collect state-mandated class attendance data using a sign-in sheet and/or seating chart.

ADDING THE CLASS:

If you add the class, make sure that your add code has worked, and that you have been properly added to the class. If not, it is your responsibility to check with the Admissions/Records office to find out how this can be corrected. After the end of Week 2, the College CAN NOT process a late add, and you could find yourself not enrolled and not receiving a grade for the course, if you're not registered.

DROPPING THE CLASS:

I would like to see everyone complete the course, earn a good grade, and become excited about science. However, the realities of life sometimes get in the way.
You should assess your situation realistically throughout the quarter.
If you decide to drop the class, you must do so by the final date to drop with a "w", or you risk receiving an "F" if you haven't earned enough points to pass the class.

Also – and this is very important – ASKING FOR AN INCOMPLETE GRADE WILL NOT WORK AS A WAY AROUND THE FINAL DROP DATE! I can only assign an Incomplete in a few, very specific situations. For example, if you miss the Geology 10 field trip, you will get an "I" grade, and that grade will get cleared up after you go on the field trip the following quarter. But if it's after Week 8, and you realize you should have dropped, and someone in Counseling or Admissions and Records tells you to ask me for an Incomplete, it is VERY UNLIKELY that the situation will actually warrant one! "I" grades cannot be given for missing a large fraction of the work in the course.

CLASS ENVIRONMENT:

Remember that we have all chosen to be in this class. We should thus have an environment that fits this choice.

Talking to your neighbor(s) while I'm lecturing, reading non-course material in class, doing outside homework, and using wireless devices of any kind* are not allowed in class, and may result in dismissal for the remainder of the class period.

*this means you won't be able to use the calculator on your cell phone during tests and quizzes. You'll need to get a separate calculator if you want to use one on tests and quizzes.

TESTS:

- After you start working on a test, you must hand it in before leaving the room.
- If you arrive late for a test or quiz, you won't be given extra time to finish it.

NOTICE: Cheating on any exam or project is grounds for a failing grade in the class and a permanent note to a student's file. "Cheating" is defined (in this course) to be an effort by a student to obtain a grade by any means other than demonstration of that student's individual achievement in mastering the class material and/or fulfilling terms of a project.

Further grounds for expulsion from the class include any activity which interferes with others' ability to benefit from the class (such as chronic distracting behavior), or which degrades the classroom's function.

GEOLOGY 10 Lecture Schedule, Spring 2026 MW Class

Important: Dates of TESTS are fixed, but lecture topics are tentative. For example, we may or may not cover "Oil Geology" on May 4th, depending on how quickly we cover the preceding material.
Each test covers the material since the last test. Final Exam is comprehensive – it covers the whole quarter.

		MONDAY	WEDNESDAY
Wk 1	Apr	6 Introduction, Goals, Procedures Earth's origin and layers	8 Mineral Properties How minerals work; Atoms and bonding
Wk 2	Apr	13 More chemistry of minerals Mineral classes and silicate minerals	15 Igneous rocks: Texture, compositions, and origins Melting and crystallization
Wk 3	Apr	20 **TEST 1** Volcanoes	22 Review Test 1 Weathering and Erosion
Wk 4	Apr	27 Sedimentary Rocks: Classification	29 Sedimentary Rocks: Sedimentary structures, Overturned strata, depositional environments
Wk 5	May	4 Oil Geology Metamorphic Rocks	6 Geologic Time
Wk 6	May	11 **TEST 2** Rock deformation, Fault terminology	13 Review Test 2 Dip-Slip faults
Wk 7	May	18 Strike-slip faults, Folds Earthquake basics	20 Earthquakes: Measurement and hazards Earth's Interior
Wk 8	May	25 **HOLIDAY**	27 Continental Drift Paleomagnetism
Wk 9	Jun	1 **TEST 3** Divergent Plate Boundaries	3 Convergent & Transform Plate Boundaries
Wk 10	Jun	8 Streams	10 Groundwater Basics **FIELD TRIP: Saturday 6/13**
Wk 11	Jun	15 Groundwater Contamination Caves and Karst	17 Glaciers and Ice Ages
Wk 12	Jun FINALS	22 **FINAL EXAM** 9:15 – 11:15 am	24

For reading assignments, go to the class's Canvas site and look for the "Reading Assignments" page.

Geology 10 LAB schedule, Spring 2026 MW Class

	MONDAY	WEDNESDAY
Wk 1	**NO LAB THIS DAY**	**NO LAB THIS DAY**
Wk 2	Mineral identification	Mineral identification
Wk 3	Rock textures	Rock textures
Wk 4	Rock identification	Rock identification
Wk 5	**Quiz on rock and mineral I.D. *** + Lab on geologic time	Lab on geologic time
Wk 6	Topographic maps	Topographic maps
Wk 7	Seismology	Seismology
Wk 8	**HOLIDAY**	**Quiz on geologic time, topographic maps, and seismology +** Lab on geologic maps
Wk 9	Lab on geologic maps	Lab on geologic maps
Wk 10	Lab on folded rocks (anticlines and synclines)	Lab on folded rocks (anticlines and synclines)
Wk 11	**Quiz on geologic maps and folded rocks** + Lab on plate tectonics	**NO LAB THIS DAY**

*The lab quiz on rock and mineral I.D. (Week 5) is open-lab-book. The other three lab quizzes (and the lecture tests and the final) are closed-book, closed-notes.

To find out what's on the lab quizzes, go to the class's Canvas site and look for the "What 2 Know" modules.

IMPORTANT INFORMATION ABOUT THE REQUIRED FIELD TRIP IS ON THE <u>NEXT</u> PAGE

FIELD TRIP

NOTE: There is a version of this page on the web on the class's Canvas site.

It has links to help you get to the field trip stops, such as the "Plus Codes" you can put into Google Maps. It has other important information, too… make sure you visit that web page!

Make sure you read and examine ALL of the information on this page! Scroll down to the bottom and read everything, and go to the web version of this page, and examine all of the clickable links. Do these things before you ask me a question about the field trip. Your question is very likely to be answered somewhere on this page, or on the web version of it, listed above.

Spring 2026: You will go on Saturday June 13.

Here's the deal with the field trip:

- The 4-year schools, such as the Cal State and UC schools, make us require you to participate in the field trip, in order for them to accept your credits. No field trip, no transferable credits for you!
- Until 2008, De Anza College was able to afford buses for the field trip. Students used to meet at school on the morning of the trip, and the buses would take them on the trip.
- Unfortunately, the late-2000s / early 2010s California budget crisis put an end to the buses. The College decided it could no longer afford buses. Your instructor wishes this were otherwise, but there is nothing they can do about this.
- So, we'll meet at 10am on the day of the field trip at Stop 1. This is along Skyline Blvd (a.k.a. CA Hwy 35), near the Hayne Rd. exit from Interstate 280. SEE THE CANVAS VERSION OF THIS PAGE FOR DIRECTIONS!
- If you are unable to make it to the field trip (e.g. if you are sick that day), you'll finish the rest of the course, and temporarily get an Incomplete grade, until you go on the field trip with the next quarter's class. At that time, your grade will be changed to the grade you earned from your tests and quizzes.

Field Trip sites – Our temporary outdoor classrooms:

In order to understand the Earth and its history, geologists don't just work in a laboratory or in front of a computer – they go out and study the Earth first-hand.

We'll study the geologic history of the Bay Area and the methods of geologic field work at four sites, whose locations are on the Canvas web version of this page. They are: Skyline Road, Mussel Rock, Montara State Beach, and the Seal Cove / Moss Beach neighborhood. The Canvas web page has Google "Plus Codes" you can put into Google Maps, which will get you to these sites. (They mostly don't have street addresses, which is why the "Plus Codes" are necessary.)

For this class, De Anza College has adopted these public places as temporary outdoor classrooms. You will be responsible for commuting to these temporary outdoor classroom sites, just as you would normally commute to class in Cupertino.

We'll start doing geology at 10am at Stop #1, and we should finish our work at Seal Cove / Moss Beach by 4pm.

Liability Release:

On the web version of this page, a link will show you the liability form you'll have to sign in order to go on the trip and get credit for the class. You should look at the form (linked from the web version of this page, which can be found on the class's Canvas site). I don't think anyone will have a problem with signing it, but if you're sure you don't want to sign it, then you shouldn't register for this class.

Student Learning Outcome(s):

• Apply the principles of scientific methodology to evaluate hypotheses on how the earth works as an integrated system.
• Use data and observations to track and predict changes in the Earth system resulting from dynamic Earth Processes.
• Use observations from the crust and lithosphere of the Earth to determine geologic history at hand-sample, outcrop, local, and regional scales.
• Apply scientific methodology and geologic principles to analyze the impact of the Earth system on humanity, from specific natural hazards and the availability, use, and distribution of Earth resources.

Office Hours:

M,W	4:00 PM - 5:00 PM	S-15a
T	1:00 PM - 3:00 PM	S-15a