

Welcome to Geology 10

Geology 10: *Introductory Geology*
Fall Quarter, 2026
GEOL 10 (5.0 units)
GEOL 10.02Y.3Y ONLINE (Lec)



GEOL 10.02Y M, W, 9:30 am to 10:45 am (Lab)
GEOL 10.03Y M, W, 11:30 am to 12:45 pm (Lab)
Course website: on Canvas via your De Anza MyPortal

Hi and welcome to Introductory Geology. I am looking forward to joining you on a journey of discovery of your home planet. Please think of my role more as a guide on an alien world rather than as a "teacher." Also, feel free to contact me if there is anything I can do to help you achieve success in the class.

Dr. D

Contact Information

Christopher DiLeonardo, Ph.D.

Office S14a

Contact: via Canvas Messenger not email

Office Hours MW 12:45 to 1:45 pm

Via Zoom Th 9:30 to 11:30 am

Use Canvas Messaging to set up an appointment.

Phone (408) 864-8632

email: dileonardo@deanza.edu

Course Catalog Information

Analysis of the composition, structure, and description of the Earth's external and internal features and the geologic processes responsible for their origin and evolution. Examination of the concepts and principles upon which geologic knowledge is based. One Saturday field trip is required.

Student Learning Outcomes (SLOs) and Course Objectives

A clear understanding of what you should be learning in any class is essential to your success. Student Learning Outcomes (SLOs) and Course Objectives gives you a general picture of what is covered in the course.

Student Learning Outcomes (SLOs) for GEOL 10: Introductory Geology

Student Learning Outcomes are overarching, clear, and assessable statements that identify and define what a student is able to do at the successful completion of a specific course. These outcomes may involve a combination of knowledge, skills/abilities, and/or attitudes that display behavioral evidence that learning has occurred at a specific level of competency.

1. Apply the principles of scientific methodology to test hypotheses on how the Earth works as an integrated system.
2. Use data and observations to track and predict changes in the Earth system resulting from dynamic Earth Processes.
3. Use observations from the crust and lithosphere of the Earth to determine geologic history at hand sample, outcrop, local, and regional scales.
4. 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.

Every effort is made so that each student will feel comfortable in a supportive collaborative learning environment. I invite you all to work with me towards achieving that goal. I also invite you to reach out to each other in the class and work with all of your colleagues giving each classmate and their thoughts the respect deserved.

Course Objectives for GEOL 10: Introductory Geology

The course objectives for Introductory Geology expand out of the overarching Student Learning Outcomes. In general they are intended to foster an understanding of the scientific approach to problem solving and a specific knowledge of the fundamental concepts of geology.

- A. Summarize and describe a globally and temporally inclusive overview of the Earth.
- B. Distinguish between hypotheses, theories, and laws, and demonstrate the assessment of hypotheses through testing.
- C. Analyze the physical properties of minerals and their significance in rock genesis, starting with basic chemical principles.
- D. Distinguish between the major families of rocks and analyze how they relate to each other as parts of the rock cycle; interpret conditions of formation from physical characteristics of rocks.
- E. Evaluate relative age-relationships between rock units in order to develop a geologic time scale, and calibrate this time scale by calculating rock ages via isotopic dating.
- F. Construct and interpret geologic maps and cross-sections in order to delineate the three-dimensional structure of the earth's crust; visualize structures such as faults and folds.
- G. Assemble and synthesize geophysical information in order to assess earthquake hazards and to construct plausible models of the Earth's deep interior.
- H. Synthesize geological, seismological, and paleomagnetic data in order to demonstrate an understanding of global plate tectonics, and predict phenomena such as the locations of earthquakes and volcanoes.
- I. Analyze imagery and topographic data in order to elucidate the evolution of landforms produced by the interaction of rock, soil, water, wind, and ice.
- J. Evaluate and assess environmental hazards in a geologic context; assess locations of geologic resources such as mineral deposits and hydrocarbons from geologic data, and appraise the impacts of geologic resource issues on the environment and human populations.

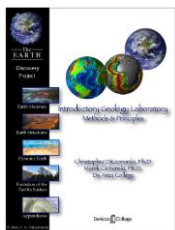
Required Materials



Note: You are responsible for being prepared for each class session. Having the required materials, doing readings, and having the proper laboratory exercise with you at the right time is important to your success.

Textbook: *An Introduction to Geology*, Johnson, C., Matthew, A.D., Inkenbrandt, P., Mosher, C. 2017. Salt Lake Community College.

Note: Digital Online Textbook is a Creative Commons Work, free for noncommercial use. Readings will be available through the Canvas course site.



Lab/Activities: Come from the free digital lab manual: *Introductory Geology Laboratory: Methods and Principles*, v. 1.4, DiLeonardo, C.G. The Earth Discovery Project 2020.

Note: Lab exercises will be available weekly through Canvas site online.

Other: Colored pencils and Millimeter scale/ruler

Class Policies

Attendance

Students are expected to attend every lab meeting! And participate each week in all of the online classwork. Missing class may have the single greatest negative effect on your learning. Missing a class has a huge “ripple effect,” as holes form in your learning that impede your understanding of future lectures, laboratories, or readings

A Note on Laboratory Work

Laboratory work is a collaborative discovery-based-learning experience. These activities happen in real time and in sequence with the lecture. Whereas students are encouraged to go over individually and with their lab partners any missed work, the actual experience cannot be made up. It is important to note as well that missing lab work has a cumulative negative impact on your learning. Deductions to your participation score will reflect that impact. The first lab session missed during each half of the term will result in a 10-point deduction for each session. More missed lab work will be deducted at 15 points per session up to the 50 points available for each half of the course. Also note students exceeding

Arriving on Time for Lab

Students are expected to arrive on time for class! Being late to class is not only disruptive to your classmates' learning environment, but also has a huge negative impact on your own learning. Importantly, the beginning of each lecture often sets the educational framework. If you walk in late, you may not have the “scaffolding” to support your learning and may miss the point of much of what follows in the lecture. Students who arrive after the official start time will be marked as “late.”

Contacting Me

Please contact me using Canvas Messenger, not regular email. I will reply within 24 hours Monday through Thursday and on Monday for messages sent Friday through the Weekend.

Preparation for Class

You should come to class prepared. Students who are not prepared struggle through the individual class and through the course. If you attend every lab meeting and complete every reading, video-lecture, and assignment prior to the class it is due, you should have little trouble passing this course. Higher levels of mastery require more effort. This is a moderately rigorous college science class and laboratory. That said, you have the ability, and I am here to work with you. Your success depends on you. If you have issues that are causing you difficulties, talk to me, and we'll see if we can work through them together or if campus resources can help.

Academic Integrity

You have committed to your education by enrolling at De Anza College. This commitment requires that you represent your own academic work honestly to others. Academic dishonesty “cheating,” will not be tolerated. Please read the college policies regarding academic dishonesty in the college catalog. Students found engaging in academically dishonest behavior (“cheating”) in this course will receive o

points for the assignment and may be referred to the Dean of Students for college disciplinary action. Students found to be cheating on any assignment will call into question the validity of their course assessment and must retake ALL assessment instruments to ensure their veracity.

Academic Policies & Progress

Students are advised to consult their College Catalog or Student Handbook regarding issues of discipline, cheating, etc. The counseling staff and I are also available to discuss college policy as the need arises. You are encouraged to monitor and discuss with me your academic progress in this course. If you are struggling with specific learning issues, I would recommend reaching out to the Disabled Student Services on Campus (link on class home page). Exams and quiz scores are available within a week of the quiz or exam. The grading system is clearly outlined below and there will be no “special” projects available to make up for *poor* academic performance. But... the course is designed for your success.

Missed Exams and Quizzes

If a documented emergency prevents a student from participating in the Part B portion of a midterm or final exam, I may, at my discretion, give an alternate or oral exam within a week of the midterm exam date or within the next two days after the final exam. For quizzes, I will give an alternate or oral exam within a week of the quiz date.

Cellular Phones, mobile devices, other personal electronic devices

Using cellular phones or other personal electronic devices during laboratory activities is prohibited. Computers used to take notes during discussions are allowed as long as they are not being used for another purpose or for online access of any kind. Laboratory computers are for completing laboratory activities only and not to be used for other purposes. Students not in compliance with this policy will be asked to leave the class for the day on a first violation and may be dropped from the class if a second violation occurs. Students found using any electronic devices (including cell phones, headphones, smart glasses) during a quiz or exam will receive a 0 score and be asked to leave class for the day.

Artificial Intelligence (AI) Policy

AI is a tool in the modern world. While I have no issue with using it as a tool for class assignments, collaborative quizzes, exam preparation, etc., it can never replace doing your own work. Nor is it ever allowed to be represented as your own work. In this class, I would encourage you to use all the materials given in class as a primary resource. I encourage you to expand your learning, bounce ideas off AI, or use AI to ask questions about your own interpretations. However, you should fully evaluate any information or interpretations from AI. That is, don't just take the answer but consider the reasoning presented. This expands your learning and is an appropriate and encouraged use of the technology.

Intellectual Property Statement

All materials presented in this class, including all assignments, quizzes, exams, supporting material for exams, lab worksheets, lab keys, keys for any quizzes, information presented in lectures, lecture videos, special papers in class, and all class handouts, are my intellectual property. They are protected under U.S. Copyright Law. They are created for your learning in class and may only be shared with members of your current class. Any sharing of this material with anyone other than members of this class is strictly prohibited. Uploading any of the materials, without my consent, to a third-party website with or without financial gain is a violation under U.S. Copyright Law. It also violates the college's student code of conduct and may result in disciplinary action.

Links to other materials used in class are the copyright of the authors and content creators and are used here under the “fair use” provisions of United States Copyright Law.

Field Workshop & Waiver of Liability

Students in Geology 10 must attend the Introductory Field Workshop. Please see the schedule below for the field workshop date and time. ** State law mandates ALL students participating in an off-campus “field excursion” sign an appropriate waiver. Because fieldwork is a curriculum requirement, students who refuse to sign the waiver are opting out of the course and will be disenrolled.

Field Workshop Exchange

The required field workshop occurs on a Saturday. Between an average transportation time of over an hour each way and fieldwork of over 4 hours, your total time is about equivalent to your weekly lecture and laboratory hours. Because we must account for all your course hours for state audit purposes, these hours are exchanged for one course week, as announced in the schedule. Please note the field trip exchange week does not necessarily occur near the actual field trip date. Please check this term's schedule for the exchange week. Geology lectures and laboratory will not occur during the field trip exchange week.

*****Americans With Disabilities Act (ADA) Exemption from Field Work:***

Students with physical limitations or other special needs that would preclude participation in fieldwork will be given an appropriate alternate assignment. Every reasonable accommodation will be provided so that all students can participate and benefit from the field experience. If you have questions or concerns regarding access and participation issues please contact your instructor. This exemption only applies to students with documented disabilities that have been verified through the Disabled Students Program & Services Office at De Anza College and where no

Grading

1,000 pts for the class:

Area A: Methods & Principles

150 pts. In-class laboratory and field projects (collaborative experiences)
50 pts lab participation first ½ of course *50 pts lab participation 2nd ½ of course*
*50 pts field workshop participation**

Area B: Concepts

150 pts. Concept quizzes (*take-home, collaborative assessment*)
25 pts Earth Science IQ (individual) *25 pts Igneous Rocks*
25 pts Seismology *25 pts Depositional Environments*
25 pts Plate Tectonics *25 pts Geologic Time*

Area C: Skill Proficiency Areas

100 pts. Proficiency Quizzes
25 pts Topographic Map Quiz (Individual assessment)
25 pts Mineral ID Quiz (Individual assessment)
25 pts Rock Classification: collaborative *(Individual assessment)*
25 pts Geologic Map & Earth Structures Quiz (individual assessment)

Area D: Application & Synthesis

300 pts. Midterm Exam
150 pts Final Exam Part A (take-home)
150 pts Final Exam Part B (in-class individual assessment)
300 pts. Final Exam*
150 pts Final Exam Part A (take-home)
150 pts Final Exam Part B (in-class individual assessment)

Final Grade

Plus	Letter Grade	Minus	Rubric
A+ > 999 pts	A = 895 to 999	A- = 875 to 894	<i>Student displays both a level of knowledge and understanding of Geology & the Earth system superior to the general public.</i>
B+ = 855 to 874	B = 771 to 854	B- = 750 to 770	<i>Student displays a level of knowledge of Geology & the Earth system significantly above that of the general public; and a basic understanding of the principles of Geology & the Earth system.</i>
C+ = 730 to 749	C = 625 to 730		<i>Student demonstrates a basic knowledge and understanding of Geology</i>

			<i>&the Earth system above that of the general public.</i>
D+ = 605 to 624	D = 520 to 604	D- = 500 to 519	<i>Student does not demonstrate knowledge and understanding of Geology & the Earth system beyond that of the general public.</i>
F < 500			

Final grades are "non-negotiable" and are based entirely on your performance in class work, quizzes, collaborative experiences, and exams. Once posted, grades cannot be changed unless there is a recording error. This is a matter of State Law. Please don't ask!

**Regardless of points scored, each student is required to attend the field trip, satisfactorily complete at least 70% of the lab work, and be present at the final examination to receive a passing grade for the course.*

Class Schedule Fall Quarter 2026

Class Schedule is tentative and subject to change by your professor as deemed necessary. All class readings, lectures, and material will be available through the Class Canvas Site. Labs are held in the Geology Teaching Lab (S15) on the De Anza Campus and are mandatory. This term is eleven weeks long, followed by a final exam. All schedule changes will be posted on the Class Site in Canvas.

WEEK

Date / Session

Topic:

Learning Tutorial/Activity/ Assignment

Reading

An Introduction
to Geology

PART I: THE DYNAMIC PLANET

01

Module 1 *The Study of a Restless Planet*

09/21 – 09/27

Video Lecture: *Science and the Discovery of the Restless Earth*

Chap. 1.0

Lab Session 01A M Orientation

Lab Session 01B W

Lab: *Topographic Maps**
(Printout lab worksheet from online lab manual)

Due This Week

Pre-Class Earth Science IQ Quiz Wednesday 09/23

02

Module 2 *The Dynamic Earth*

09/28 - 10/04

Video Lecture: *Earthquakes*

Chap. 9.5 – 9.9

Video Lecture: *The Tectonic Framework of Planet Earth*

Chap.2.0

Lab Session 02 MW

Lab: *Seismology and the Instrumental Study of Earthquakes.**
(printout lab worksheet from online lab manual)

In Lab Quiz

Proficiency Quiz: Topographic Maps Monday

Due This Week

Concept Quiz: Seismology Sunday Night 11:55 pm

Important Note:

Last day to drop without a W is Sunday 10/04

03

Module 3 *The Heat Within*

10/05 – 10/11

Video Lecture: *The Anatomy of a Scientific Revolution*

Video Lecture: *Volcanism*

Chap. 4.5

Lab Session 03 MW

Lab: *Plate Tectonics & Plate Motions**

(printout lab worksheet from online lab manual)

Due This Week Concept Quiz: Plate Tectonics Sunday Night 11:55 pm

**Note: Students must pre-print the laboratory exercises and bring them with you to lab. Keep all laboratory work in a binder and have it available during the laboratory for reference.*

<u>WEEK</u> Date / Session	<u>Topic:</u> Learning Tutorial/Activity/ Assignment	<u>Reading</u> <i>An Introduction To Geology</i>
<i>04</i>	<i>Module 4 The Changing Face of the Earth</i>	
10/12 – 10/18	<u>Video Lecture:</u> <i>Running Water: Stream Erosion and the Evolution of Landscapes</i>	Chap. 11
	<u>Video Lecture:</u> <i>Landscapes of Climatic Extremes: Deserts & Glacial Environments</i>	Chap. 13 & 14
Lab Session 04A M	<u>Lab:</u> <i>Evolution of an Integrated Stream System*</i>	
Lab Session 04B W	<u>Lab:</u> <i>Modification of Stream Eroded Landscapes* by Glaciation</i>	
Midterm Exam	Download Midterm Packet and Part A of Exam Available on Monday 10/12 Part A due Sunday 10/18; submit online Midterm Part B: Monday 10/19 in-class exam	

PART II: WRITTEN IN STONE

<i>05</i>	<i>Module 5 The Universe Beneath Each Footstep</i>	
10/19 - 10/25	<u>Video Lecture:</u> <i>Minerals: The Building Blocks of Rocks Part I</i>	Chap. 3
Lab Session 05A M	Midterm Exam Part B**	
Lab Session 05B W	<u>Lab:</u> <i>Mineral Properties and Identification*</i>	
Due This Week	Midterm Exam Answers Part A: submit online Submission sheet Sunday 10/18 closes at 11:55 PM PDT Part B in class Monday 10/19; <i>do not be late for the exam</i>	

06 *Module 6 The Record of the Rocks*

10/26 – 11/01	<u>Video Lecture:</u> <i>Minerals: The Building Blocks of Rocks Part II</i>	Chap. 3
	<u>Video Lecture:</u> <i>Rocks That Form Underground</i>	Chap. 4.1-4.4 Chap. 6
Lab Activity 06A M	<u>Lab:</u> <i>Mineral Properties and Identification*</i>	
Lab Activity 06B W	<u>Lab:</u> <i>Rock Textures and Genesis*</i>	
<i>*Pre-print lab sheets and bring to lab.</i>		

<u>WEEK</u> Date / Session	<u>Topic:</u> Learning Tutorial/Activity/ Assignment	<u>Reading</u> <i>An Introduction To Geology</i>
<i>07</i>	<i>Module 7 Pages of Stone</i>	
11/02 – 11/08	<u>Video Lecture:</u> <i>Sediments & Sedimentary Rocks</i>	Chap. 5
	<u>Video Lecture:</u> <i>Sedimentary Rocks: Keys to Past Environments</i>	Special Paper: <i>Sedimentary Environments</i>
Lab Session 07 MW	<u>Lab:</u> <i>Rock Genesis & Classification*</i>	
In-Lab Quiz	Proficiency Quiz: Mineral ID Monday	
Important Note:	<i>Last day to withdraw from class is Friday 11/06</i>	
<i>08</i>	<i>Module X Field Trip Exchange Week</i>	
11/09 – 11/15	<u><i>No lecture or laboratory this week; field trip exchange</i></u> <i>Also, Wednesday is Veterans Day; campus is closed.</i>	
Due This Week	Concept Quiz: Igneous Rocks Sunday 11:55 pm Concept Quiz: Sedimentary Environments Sunday 11:55 pm	
<i>09</i>	<i>Module 8 Written in Stone</i>	
11/16 – 11/22	<u>Video Lecture:</u> <i>Geologic Time & Interpreting Earth History</i>	Chap. 7
Lab Session 08 MW	<u>Lab:</u> <i>Earth Structures Part I: Orientation of Strata*</i>	

Due This Week Concept Quiz: Geologic Time Sunday 11:55 pm

10

Module 9 Riddle of the Rocks

11/23 – 11/29 Video Lecture: *Earth Structures & Deformation of the Earth's Crust* Chap. 9.1 – 9.5

Video Lecture: *The Leading Edge: The Tectonic Evolution of California.*

Lab Session 09 MW Lab: *Earth Structures Part II: Folds, Geologic Maps & Cross-sections**

In Lab Quiz Proficiency Quiz: Rock Classification Monday

Field Workshop Field Exercise: *Geologic History of Cliff Exposures at Montara State Beach, California. Saturday, 11/28 9:15 am to 12:45 pm*

WEEK

Date / Session

Topic:

Learning Tutorial/Activity/ Assignment

Reading

An Introduction

11

Module 10 Explorations

11/30 – 12/06 Collaborative prep for Final Exam

Lab Session 10 MW Lab: Open Lab for Final Exam Prep

In Lab Quiz Proficiency Quiz: Earth Structures Monday

12

Final Exam

Final Exam Download Final Exam Packet and Part A of Exam
Available on Monday 12/01 (Week 11)
due on Sunday (12/07) 11:55 pm
Final Exam Part B see below:

FINAL EXAM SCHEDULE: GEOL 10

12/07

GEOL 10 Sec. 02Y *Early Lab*

Monday: 12/07 Final Exam (Part B): 9:15 am to 11:15 am**

12/07

GEOL 10 Sec. 03Y *Late Lab*

Monday: 12/07 Final Exam (Part B): 11:30 am to 12:30 pm**

*Enjoy your Winter Break!
Merry Christmas & Happy Holidays of Light, Dr. D.*

*****Notes for Final and Midterm Exams:***

- 1. Attendance at the Final Exam is mandatory. Students must complete the field requirement and attend the final exam to receive a passing grade.*
- 2. For both the Midterm and Final, bring your Exam Packet (worked on in advance), with any notes or interpretations, to Exam Part B.*
- 3. For each exam, you must have completed Part A of the Exam and turned in your answers PRIOR to starting Part B.*
- 4. You may NOT have a copy of the Part A questions in front of you while taking the Part B portion of each Exam.*
- 5. Mark all answers on the ScanTron® form (provided) with a #2 pencil and have a good eraser to completely erase any changes.*

No student may start the final or midterm exam after the time the first student to finish leaves the exam area.

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:

12:45 PM - 1:45 PM
9:30 AM - 11:30 AM

S14A M,W
Zoom TH