

Welcome to Geology 10

Geology 10: *Introductory Geology*
Fall Quarter, 2026
GEOL 10 (5.0 units)
GEOL 10.52Z

Independent Online Instruction (asynchronous)

Course website: on Canvas via your De Anza MyPortal
F 26 GEOL D10.52Z Introductory Geology



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 (*Behind Geology Teaching Lab*)

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

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 give 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 Earth's crust and lithosphere to determine geologic history at the 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.

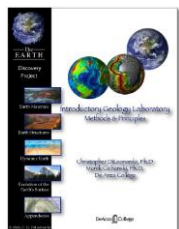
Required Materials



Note: *It is your responsibility to be prepared for each class session. Having the required materials, doing readings, 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 virtual lab addition, DiLeonardo, C.G. The Earth Discovery Project 2020.

Note: *Lab book/exercises will be available through Canvas site online.*

Other: Color pencils and Millimeter scale/ruler

Weekly Class Modules

A module is specific and discrete learning segment that leads to the understanding of a given topic or set of topics. Modules will be assigned by topic on Canvas. Modules include all assignments that will be completed for a particular topical set. A module is a specific and discrete learning segment that leads to the understanding of a given topic. Modules are to be completed within the dates specified on the syllabus (schedule is below). More details on these assignments, including which ones will be turned in, as well as how they will be turned in are explained below and on the assignments themselves.

A Note on Online Learning

Online courses are different from traditional lecture courses. They offer much more flexibility in completing assignments and learning material from sources other than traditional lectures. However, you will need to have good self-discipline in completing these tasks, especially in a timely manner. This is a five-unit lecture-laboratory course. This equates to four hours of lecture and 3 hours of laboratory work per week during a regular quarter. This does not include the extra personal study time needed in addition to those mandatory class hours that the State of California and De Anza College requires. If you are planning on mastering the material covered this quarter, you will need to make sure you 1.) Are engaged in the course at least 7-hours a week (not including study time); 2.) Login at least two different days during the week (to stay current in the course); 3.) Prepare the exams using your notes from online learning tutorials, your completed laboratory activities, and your textbook readings.

Lectures Online

Lectures for the class will be pre-recorded. This gives every student the flexibility to view them at their own convenience. This format also allows you to go over the lectures, or look back at them as needed. Any lectures will be delivered via a link to a YouTube presentation. Other materials will be offered via a link to an online learning resource. Missing the online lectures, much as missing lectures in a traditional class, will severely impact your learning of the subject and impact your work on exams. As much of the exam material comes out of lectures along with readings and laboratory work, you are encouraged to discipline yourself to go through them in each module and take notes. Notes do not need to be turned into me, but will become invaluable resources along with your textbook in completing the exams.

Laboratory Activities

Each module includes an inquiry-based laboratory activity that builds on the learning in that topic. Laboratory activities will be in the form of .pdf files from the online laboratory workbook. Each lab session will have links to online resources for each lab along with a link to download the specific laboratory worksheet. You should printout each lab worksheet, complete the work, and then either scan the lab or take pictures of each page. Upload your completed lab work via Canvas. It is OK to do the work directly on the downloaded .pdf file if you do not have access to a printer. But if you do this, you are responsible for ensuring that charts, profiles, and map work have the same quality and resolution as if you worked with pencil and paper.

Laboratory work is critical to your learning and is also necessary to meet laboratory class requirements for transfer and degree programs. You cannot pass the class without completing at least 70% of the laboratory exercises and the Virtual Field Trip Requirement.

Readings from Web Textbook

This class uses an integrated approach to learning. It is important that you complete the assigned readings in the online textbook each week. The book will also be an invaluable resource for preparing for the midterm and final exam. The readings are important part, especially in an online course where

your work is more independent than a face-to-face classroom situation. Each week you will find a link to online readings in your weekly Class Page on the *Canvas* class site. You should complete these readings before watching the *Video Lectures* each week.

Readings from Special Papers

To supplement the textbook, I have written several *Special Papers* on topics that need more specific coverage than the textbook provides. You need to read these papers as you would the textbook. You will find these on either class web page and, as needed, occasionally as part of the pre-lab work. Additionally, one topic will include a *Digital Poster* that synthesizes several important concepts. Study that digital poster as part of your required reading.

Academic Policies

Academic Dishonesty: Students are advised to consult their College Catalog or Student Handbook regarding issues of discipline, cheating, etc. Academic dishonesty (“cheating”) will not be tolerated, and students will receive a score of 0 on any assignment for which they are found to have cheated.

Late Work: Late labs will be accepted under an automatic emergency extension of one week. Missed quizzes and exams will result in a score of 0. Quizzes and the midterm exam can be made up by arrangement within one week. You must make up the final exam within two days of the scheduled final exam day. The instructor may replace a makeup quiz or exam with an appropriate alternative to ensure the integrity of the assessment.

Academic Progress

You are encouraged to monitor your academic progress in this course and discuss it with me. The grading system is clearly outlined below and there will be no “special” projects available to make up for poor academic performance. 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).

Note: Failure to properly withdraw from the course will result in a letter grade of “F” or “FW” for the course, depending on the timing of your disengagement from the class.

Virtual Field Trip

Students enrolled in *Introductory Geology* will participate in a virtual field trip as part of the course. This activity is required for the course. I will share information later in the quarter.

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.

A Note About Virtual Laboratories & Field Trips

Every effort in this course is made to construct virtual learning experiences that provide the same student learning outcomes as the course offered in a “face-to-face” format. Virtual field trips and laboratories are created with this in mind. Laboratories exercises will be offered weekly that dovetail with the learning presented in *lectures*, and *web-textbook* readings. Laboratory activities will follow the same sequence generally offered in face-to-face laboratories. Laboratory exercises can be found on the Canvas class site for each week. Follow the instructions on the site. In most cases you need to download and printout a laboratory activity to follow instructions and record your answers.

Missed Exams and Quizzes

If a documented emergency prevents a student from participating in 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.

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.

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
25 pts Earth Science IQ *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) *(individual assessment)*
25 pts Mineral ID Quiz (individual assessment) *25 pts Geologic Map & Earth Structures Quiz (individual assessment)*
25 pts Rock Classification: collaborative

Area D: Application & Synthesis

300 pts. Midterm Exam
150 pts Midterm Exam Part A collaborative take-home
150 pts Midterm Exam Part B online exam
300 pts. Final Exam*
150 pts Final Exam Part A collaborative take-home
150 pts Final Exam Part B online exam

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 & 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			

**Each student is required to complete at least 70% of the laboratory work, the virtual field trip, and participate in the final examination to receive a passing grade for the course. A student will receive a letter grade of "F" regardless of any other point totals if they fail to meet these minimum required standards.*

Please Note: 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!

Class Schedule Fall Quarter 2026

Class Schedule is tentative and subject to change by your professor as deemed necessary. All class activities and material will be available through the Class Canvas Site. Note: Readings and Laboratory Activities can be accessed through the Canvas Class Website. This term is eleven weeks long, followed by a final exam. The schedule may be changed as needed by the instructor during the term. All changes to the schedule will be updated on the Class Site in Canvas.

WEEK

Date / Module

Topic:

Learning Tutorial/Activity/ Assignment

Reading

An Introduction
To Geology

PART I: THE DYNAMIC PLANET

01

The Study of a Restless Planet

09/21 – 09/27

Lecture 1-0: Science and the Discovery of the Restless Earth

Chap. 1.0

Lab Activity 01

Topographic Maps

(printout lab worksheet from online lab manual)**

Due This Week

Pre-Class Earth Science IQ Quiz Sunday 11:55 pm PT

Proficiency Quiz: Topographic Maps Sunday 11:55 pm PT

02

The Dynamic Earth

09/28 - 10/04

Lecture 2-1: Earthquakes

Chap. 9.5 – 9.9

Lecture 2-2: The Tectonic Framework of Planet Earth

Chap. 2.0

Lab Activity 02

Seismology and the Instrumental Study of Earthquakes.

(printout lab worksheet from online lab manual)

Due This Week

Concept Quiz: Seismology Sunday 11:55 pm PT

Important Note:

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

03

The Heat Within

10/05 – 10/11

Lecture 3-1: The Anatomy of a Scientific Revolution

Lecture 3-2: Volcanism

Chap. 4.5

Lab Activity 03

Plate Tectonics & Plate Motions

(printout lab worksheet from online lab manual)

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

*Lectures will be pre-recorded and available on the Weekly class page. Complete readings and lectures early in the week, and in most cases before that week's lab work. Lab work is due on the Sunday of the week that the class Module is presented. Quizzes are also due on Sunday evenings. Exams are scheduled and will be due on the day announced in the class pages in Canvas.

WEEK

Date / Module

Topic:

Learning Tutorial/Activity/ Assignment

Reading*An Introduction
To Geology**04**The Changing Face of the Earth*

10/12 – 10/18

Lecture 4-1: Running Water: Stream
Erosion and the Evolution of Landscapes

Chap. 11

Lecture 4-2: Landscapes of Climatic Extremes:
Deserts & Glacial Environments

Chap. 13 & 14

Lab Activity 04A*Evolution of an Integrated Stream System*
(printout lab worksheet from online lab manual)**Lab Activity 04B***Modification of Stream Eroded Landscapes
by Glaciation*
(printout lab worksheet from online lab manual)*05**Explorations I*

10/19 - 10/25

Exam Preparation: Midterm Exam Preparation**Midterm Exam**Download Midterm Packet and Part A of Exam
Available on Monday, 10/19**Part A Due This Week: Sunday 10/25 closes at 11:55 PM Pacific Time****Midterm Part B is Monday, 10/26 closes at 11:55 PM Pacific Time****PART II: WRITTEN IN STONE***06**The Universe Beneath Each Footstep*

10/26 – 11/01

Lecture 6-0: Minerals:
The Building Blocks of Rocks

Chap. 3

Lab Session 06*Mineral Properties and Identification*
(printout lab worksheet from online lab manual)**Due This Week**

Midterm Exam Answers Part A: submit online

Part B complete online Monday, 10/26 closes at 11:55 PM Pacific Time ***

Proficiency Quiz: Mineral ID Sunday 11:55 pm PT

******Note: Midterm Exam Part B is due on Monday,10/26 at 11:55 pm Pacific Time, NOT Sunday.***

WEEK

Date / Module

Topic:

Learning Tutorial/Activity/ Assignment

Reading*An Introduction
To Geology**07**The Record of the Rocks*

11/02 – 11/08

Lecture 7-0: Crystalline Rocks
Rocks that form Underground

Chap. 4.1-4.4

Chap. 6

SP: *Igneous Rocks***Lab Activity 07***Rock Textures and Genesis*

(printout lab worksheet from online lab manual)

Due This Week

Concept Quiz: Igneous Rocks Sunday 11:55 pm PT

*08**Pages of Stone*

11/09 – 11/15

Lecture 8-1: Sediments & Sedimentary Rocks

Chap. 5

SP: *Sedimentary*Lecture 8-2: Sedimentary Rocks:
*Keys to Past Environments**Environments***Lab Activity 08***Rock Genesis & Classification*

(printout lab worksheet from online lab manual)

Due This Week

Concept Quiz: Sedimentary Environments Sunday 11:55 pm PT

Proficiency Quiz: Rock Classification Sunday 11:55 pm PT

Important Note:*Last day to withdraw from class is Friday, 05/29**09**Written in Stone*

11/16 – 11/22

Lecture 9-0: Geologic Time & Interpreting
Earth History

Chap. 7

DP: *Types of*
*Contacts***Lab Activity 09***Earth Structures Part I*

(printout lab worksheet from online lab manual)

*10**Riddle of the Rocks*

11/23 – 11/29

Lecture 10-0: Earth Structures & Deformation
of the Earth's Crust

Chap. 9.1 – 9.5

Lab Activity 10*Earth Structures Part II*

(printout lab worksheet from online lab manual)

Due This Week Concept Quiz: Geologic History Sunday 11:55 pm PT
Proficiency Quiz: Earth Structures Sunday 11:55 pm PT

Virtual Field Trip Module 11 opens Monday, 11/23

WEEK

Date / Module

Topic:

Learning Tutorial/Activity/ Assignment

Reading

*An Introduction
To Geology*

11

Explorations II

11/30 – 12/06

Preparation for Final Exam

**Virtual Field
Trip**

Module due: Sunday 06/21

Final Exam

Download Final Exam Packet, Mission Briefing, and Part A of Exam
Available on Monday, 06/15
Final Exam Part A opens Thursday, 06/18; due Sunday, 06/21
Final Exam Part B opens Saturday, 06/20, and closes Monday, 06/22

12

Final Exam

FINAL EXAM SCHEDULE: GEOL 10

12/07

GEOL 10 Secs. 52Z

Monday (12/07) Final Exam Part B: Closes at 11:55 pm PT.

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

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

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