

### Basic Course Information

Semester	<b>Spring 2024</b>	Instructor Name	<b>Steven Williams</b>
Course Title & #	<b>GEOL 110 – Earth and Space Science</b>	Email	<b>steven.williams@imperial.edu</b>
CRN #	<b>20407</b>	Webpage	
Classroom	<b>Asynchronous - Online</b>	Office #	<b>NA</b>
Class Dates	<b>2/12/24 to 6/7/24</b>	Office Hours	<b>Tues from 5:00 to 5:30pm – Zoom Fri from 3:30 to 4:00pm – email/Inbox/Pronto</b>
Class Days	<b>Online</b>	Office Phone #	<b>NA</b>
Class Times	<b>NA</b>	Emergency Contact:	<b>Silvia Murray (Science Dept) at 760-355-6201</b>
Units:	<b>3.0</b>	Class Format:	<b>Canvas Online - Asynchronous</b>

### Course Description

This introductory earth and space science course covers basic principles from the fields of geology, astronomy, oceanography, chemistry, biology, physics, and meteorology. Minerals and rocks, natural processes acting at the earth's surface and within the Earth, plate tectonics, geologic time and dating, composition and motions of the Earth, solar system, phases of the moon, origin and life cycles of stars, galaxies, water movements, ocean floor, weather and climate, along with other related topics will be studied.

The Earth is diverse and dynamic, featuring volcanoes, earthquakes, tsunamis, landslides, floods, weather, climate, hurricanes, tornadoes, and so on. In order to understand what is going on in our natural world and which aspects directly affect us, we need to study past events in the earth's history to help us comprehend what has happened and begin to predict future events. To do so, we will learn some underlying principles of the natural world, from small things like the very building blocks of matter (atoms), to large things, like the cause and effect of regional forces that build mountains and make new oceans. These processes are active today on Earth, whether driven by the Sun or Earth's internal heat, and as mentioned above can culminate in earthquakes, volcanoes, landslides, ocean currents and hurricanes, all of which obviously affect humans.

This class is taught using an online (asynchronous) course format, which you do on your own time during the week. A different topic will be covered each week with assignments, quizzes, and discussions with fellow classmates to complete. You are required to complete online quizzes, assignments, and discussions for that week. There will be online materials (textbooks, videos, video lectures, supplemental material, etc.) to help you complete the assignments, quizzes and to prepare you for online exams.

### Coarse Prerequisite(s) and/or Corequisite(s)

None

### Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Gain critical thinking skills while working on and completing weekly homework assignments which include applying methods such as Venn diagrams, rubrics, and concept maps. (ILO2)
2. Gain awareness of geological events, weather and climate patterns and oceanic circulation on a global scale and understand/evaluate why events/features occur where they do. Assessment done through various homework assignments. (ILO5)
3. Gain knowledge of geological, meteorological, astronomical and oceanic features and processes through lectures, research papers, exams and presentations. Ties to all objectives. (ILO4)

### Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. Demonstrate a basic understanding of the nature of matter and describe the movement of matter and energy through the natural processes on Earth.
2. Explain the character of the sediments, rocks, and minerals of which they are composed, and relate this to the rock cycle.
3. Identify and explain the major subdivisions of Earth and processes acting deep inside Earth that effect the environment at the Earth's surface.
4. Describe the time frame within which natural processes function and learn ways geologists use to decipher Earth's history.
5. Demonstrate an understanding of the theory of plate tectonics and relate this to earthquakes, volcanoes, mountain building and the evolution of the physical world over millions of years.
6. Identify the cause and effect of earthquakes and how they are measured, and the effect on people.
7. Characterize volcanic activity and identify its natural causes and impact on the environment.
8. Identify landscapes and source of sediments on the sea floor and show the relationship between geology and ecology of the oceans.
9. Demonstrate knowledge of the dynamics of the sea by understanding near surface and deep-sea circulation patterns and interaction with the atmosphere, and the composition and properties of sea water.
10. Identify the processes that effect sea level and shape the shoreline and understand coastal environments.
11. Describe the composition and structure of the atmosphere, and examine atmospheric circulation, weather systems and storms, along with modern and past climates.
12. Describe the connection among ecology, climate and geology, and understand the character of the land surface and the agents that shape the landscape.
13. Explain the weathering process and the products of weathering.
14. Explain mass wasting and ways to avoid and prevent it.
15. Demonstrate a knowledge and understating of the role of water and wind in earth systems. Processes such as runoff, erosion, deflation and features such as stream, groundwater, and dune systems will be examined.
16. Explain the formation of glacier ice, the ways ice and ice deposits shape the landscape, and the connection between glaciers and other parts of Earth's systems.
17. Demonstrate a knowledge and understanding of the sun, the moon, the planets and other characteristics of the solar system and beyond.

### Textbooks & Other Resources or Links

We will be using Open Educational Resources (OER) textbooks this semester. I will provide links to the online textbooks that we will be using for each of the topics we will cover during the semester.

## Course Requirements and Instructional Methods

**Course Philosophy and Teaching Method:** The subject of Earth Science is as vast and diverse as the natural world around us. We will concentrate on understanding natural processes and how we explore and learn things about our planet, rather than terms and factual trivia. We will concentrate on active, inquiry-based learning and will learn how to observe, think about, and understand our place in the natural environment. The critical inquiry and observational skills that we cultivate this semester should be useful in any profession, since they give you an appreciation of how earth science processes in our natural world impact our environment and society.

Canvas is where course content, grades, and communication will reside for this course. This course has been divided into 14 modules. Each module covers the module objectives, readings, lecture videos, chapter summaries, quizzes, discussions, and assignments. You should plan on completing one module per week to stay on track for this course. All electronic files must be submitted in word (.doc, .docx) or rich text file (.rtf) format, or (.pdf) unless otherwise stated. I CANNOT open .pages files, so if you use Mac Pages, please convert your submittal into one of the above acceptable formats. Files in formats other than doc, docx, rtf or .pdf will be returned to the student and additional handling charges (lost points) may apply.

If you cannot find an answer to a question or are not sure what the question is asking contact me BEFORE you submit your assignment. I can help you find the correct answer. It is not a good idea to ask another student as they may not have the correct answer – so email me. If you submit a question without an answer you will be marked incorrect.

The best way to proceed with this course is to:

- Carefully read all aspects of each Module – Each Module has a **Module Overview** that introduces the module topic and a **Module Information** that contains class notes, lecture with slides and assignment and any other reading material.
- Read the assigned readings and complete the **Module Assignments**
- Participate in any **Module Discussions**
- Take the **Module Quiz**

Be sure to read the assignments thoroughly and answer them in your own words, brief but complete. The questions may come from the chapter in the text including figures or the class notes. Some questions are thought questions. The answer for thought questions may not appear in black and white on the pages but instead you will have to think about the material presented in the module to formulate your answer.

**Course Expectations:** My role in this class is to provide a framework that includes theory, best practices, activities, and assignments for you to utilize in the development of your knowledge, understanding, and skills. We will not have enough time to cover everything there is to know about the earth system in one semester. I care very much how and what you learn in this class, but I believe that you are responsible for participating in learning from the activities provided. This class requires significant outside preparation and reading. It will be impossible to cover all issues in the textbook during class time.

Because this is an online course there is a little more flexibility in when assignments are completed; however, there are still weekly deadlines. Readings and assignments will be made available by Monday morning of each week and should be completed and turned in **by Saturday at 11:59pm**. For instance, any assignments for the first week of class needs to be turned in by that Saturday.

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.

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If you have any questions about using parking WIFI, please call Student Affairs at 760- 355-6455.

### Course Grading Based on Course Objectives

**Grading:** Your grade for this course will be comprised of chapter questions, exams, written papers, and other class assignments.

- Assignments. Assignments will occur throughout the semester for each module. These assignments will cover the main topic of the module. Some assignments will be watching a video and answering questions about the video. Others will be an online activity such as locating asteroid impact craters, locating earthquakes and determining the size of the earthquake, etc.
- Online Quizzes: Quizzes for every module that we cover will be posted on Canvas. The quizzes will cover information from the textbook and from any online materials. Each of the online quizzes will be worth between 10 and 20 points. See the *Quiz Schedule* at the end of this syllabus for due dates. You can use the OER textbook or your notes to answer these quizzes, but not another person. Each quiz will have a time limit of 30 minutes (and two attempts), which will not be enough to look up every answer from scratch during a quiz. In other words, you will need to read the textbook, view online materials, and study your notes *before* beginning the time-limited online quiz. Quizzes close on Saturday night at 11:59pm of each week. **No late or make-up quizzes.**
- **Late work is accepted, but may have points deducted for being late.** There are **no make-ups** on exams. In the event of a college-approved absence or a significant medical problem please contact the instructor **prior** to the due date to discuss making up a missed exam or assignment. Neither family vacations (even with a note from your parents), nor friends' weddings, the dog ate my laptop, nor accidentally sleeping in justify make up work. It is the student's responsibility to **monitor** their grade in Canvas, **notify** the instructor of any discrepancies on the grade (within 1 week of that grade being added).
- Exams: There will be a mid-term and a final exam. Exams will be worth 100 points each. Exams will cover material presented in the Canvas modules, OER textbooks, homework, quizzes, and class discussion. Exams must be taken on the scheduled times. You will have 2 hours to take each exam and a 24 to 48-hour window to take the exam. The exams will be open book, open Google, open notes, etc. If for some unforeseen reason you cannot take the exam on the scheduled day, please contact me to arrange an alternative time.

**Due Dates:** The above assignments have specifically defined due dates as noted in the Course Schedule and Quiz Schedule later on in this syllabus. It is your responsibility to consult the Lecture Schedule and Quiz Schedule for all due dates. The instructor will not assume the responsibility of reminding you that an assignment is due or that an exam will be given.

**Score/Grade Posting:** All work will be weighted equally, that is, I will add up all your scores and determine the percentage from the total points possible. Exams will be curved based on the overall performance of the class. The grading scale is as follows:

A = 90 – 100%  
B = 80 – 89.9%  
C = 70 – 79.9%  
D = 60 – 69.9%  
F = <59.9%

*I want to emphasize, it is important to do all of the assignments and turn your work in complete (demonstrating knowledge of the topic) and on time. You will do well in this class if you do this.*

All scores will be posted on Canvas. *You have 7 days after a score has been posted to dispute an entry.* After the 7-day period, the score stands as entered. Do not wait until the end of the semester to check your scores.

**Dates for Withdrawals:** There is a course withdrawal deadline. Check the IVC calendar to find the course withdrawal deadline for this semester. The course withdrawal deadline is a no-tolerance policy. When the withdrawal period ends, students only have one option – a grade of F for the course.

**Incomplete Grade:** A mark of “I” is given only when a student who is otherwise doing acceptable work is unable to complete a course because of an illness or other situation beyond the student’s control. The student is required to arrange for the completion of the course requirements with the instructor. The college does not allow instructors to assign a grade of “I” simply because a student has quit attending classes and/or completing assignments.

### Coarse Policies

**Attendance:** Each student is expected to attend all classes. It is the student's responsibility to inform the instructor of an excused absence as soon as possible. Absences for emergency situations may be excused unofficially by the instructor. Instructor-excused absences must be obtained *prior to or on the day of the student's absence*. It is the student's responsibility to inform the instructor of an upcoming excused absence as soon as possible. *There will be absolutely no make ups for unexcused absences.* Please contact the instructor if you have circumstances arise that conflict with attending class. Please do not contact the instructor *after* any unexcused absence (re-read this paragraph if necessary).

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should readmission be desired, the student’s status will be the same as that of any other student who desires to add a class. It is the student’s responsibility to drop or officially withdraw from the class. See General Catalog for details.
- Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absence exceed the number of hours the class is scheduled to meet per week may be dropped. For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped. ***It is your responsibility to drop the class.***
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as ‘excused’ absences.

### What does it mean to “attend” an online class?

Attendance is critical to student success and for IVC to use federal aid funds. Acceptable indications of attendance are:

- Student submission of an academic assignment
- Student submission of an exam
- Student participation in an instructor-led Zoom conference
- Documented student interaction with class postings, such as an interactive tutorial or computer-assisted instruction via modules
- A posting by the student showing the student's participation in an assignment created by the instructor
- A posting by the student in a discussion forum showing the student's participation in an online discussion about academic matters
- An email from the student or other documentation showing that the student has initiated contact with a faculty member to ask a question about an academic subject studied in the course.

Logging onto Canvas alone is NOT adequate to demonstrate academic attendance by the student.

**Online Netiquette:** Since this class is taught wholly online, please use proper netiquette for this class.

- What is netiquette? Netiquette is internet manners, online etiquette, and digital etiquette all rolled into one word. Basically, netiquette is a set of rules for behaving properly online.
- Students are to comply with the following rules of netiquette: (1) identify yourself, (2) include a subject line, (3) avoid sarcasm, (4) respect others' opinions and privacy, (5) acknowledge and return messages promptly, (6) copy with caution, (7) do not spam or junk mail, (8) be concise, (9) use appropriate language, (10) use appropriate emoticons (emotional icons) to help convey meaning, and (11) use appropriate intensifiers to help convey meaning [do not use ALL CAPS or multiple exclamation marks (!!!!)].
- If you are participating in a Zoom class or office hours, please be respectful to others in attendance, keep external noise to a minimum, mute microphone unless participating in the discussion, raise hand or use "chat" to ask a question.

## Academic Honesty

**Artificial Intelligence - AI:** IVC values critical thinking and communication skills and considers academic integrity essential to learning. Using AI tools as a replacement for your own thinking, writing, or quantitative reasoning goes against both our mission and academic honesty policy and will be considered academic dishonesty, or plagiarism unless you have been instructed to do so by your instructor. In case of any uncertainty regarding the ethical use of AI tools, students are encouraged to reach out to their instructors for clarification.

**Academic Honesty:** Academic honesty in the advancement of knowledge requires that all students and instructors respect the integrity of one another's work and recognize the importance of acknowledging and safeguarding intellectual property.

There are many different forms of academic dishonesty. The following kinds of honesty violations and their definitions are not meant to be exhaustive. Rather, they are intended to serve as examples of unacceptable academic conduct.

- **Plagiarism** is to take and present as one's own work the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to correctly 'cite a source', you must ask for help.
- **Cheating** is defined as fraud, deceit, or dishonesty in an academic assignment or using or attempting to use materials, or assisting others in using materials, or assisting others in using materials, which are prohibited or inappropriate in the context of the academic assignment in question. Anyone caught cheating will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the General School Catalog for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment; (c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment, (e) use of a commercial term paper service.

### **Examples of Academic Dishonesty that can occur in an online environment:**

- Copying from others on a quiz, test, examination, or assignment
- Allowing someone else to copy your answers on a quiz, test, exam, or
- Having someone else take an exam or quiz for you

- Conferring with others during a test or quiz (if the instructor didn't explicitly say it was a group project, then he/she expects you to do the work without conferring with others)
- Buying or using a term paper or research paper from an internet source or other company or taking any work of another, even with permission, and presenting the work as your own
- Excessive revising or editing by others that substantially alters your final work
- Sharing information that allows other students an advantage on an exam (such as telling a peer what to expect on a make-up exam or prepping a student for a test in another section of the same class)
- Taking and using the words, work, or ideas of others and presenting any of these as your own work is plagiarism. This applies to all work generated by another, whether it be oral, written, or artistic work. Plagiarism may either be deliberate or unintentional.

### Additional Student Services

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit <http://www.imperial.edu/studentresources> or click the heart icon in Canvas.

**Anticipated Class Schedule / Calendar**

The following schedule is tentative. Depending how the class discussions proceed, the schedule may change.

<b>Week - Date</b>	<b>Activity, Assignment, and/or Topic</b>	<b>Exams</b>
Week 1 – February 12	Module 1 – Introduction to Earth Science	
Week 2 – February 19	Module 2 – Earth in Space	
Week 3 – February 26	Module 3 – Near Earth Objects	
Week 4 – March 4	Module 4 – Plate Tectonics	
Week 5 – March 11	Module 5 – Earthquakes	
Week 6 – March 18	Module 6 – Minerals	
Week 7 – March 25	Module 7 – Rocks	
Week 8 – April 1	<b>Spring Break – No Class</b>	No Class
Week 9 – April 8		Mid-term Exam
Week 10 – April 15	Module 8 – Volcanoes	
Week 11 – April 22	Module 9 – Geologic Time	
Week 12 – April 29	Module 10 – Landslides and Slope Failure	
Week 13 – May 6	Module 11 – Oceans	
Week 14 – May 13	Module 12 – Atmosphere and Weather	
Week 15 – May 20	Module 13 – Earth's Climate Systems	
Week 16 – May 27	Module 14 – Global Climate	
Week 17 – June 3		Final Exam

**\*\*\*Tentative, subject to change without prior notice\*\*\***