

### Basic Course Information

Semester	<b>Fall 2014</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>10895</b>	Webpage (optional)	
Room	<b>2733</b>	Office	<b>Room 809</b>
Class Dates	<b>8/18/14 to 12/13/14</b>	Office Hours	<b>NA</b>
Class Days	<b>Wednesday</b>	Office Phone #	<b>NA</b>
Class Times	<b>6:30 to 9:40 pm</b>	Office contact if student will be out or emergency	<b>Ofelia Duarte (Science Dept) at 760-355-6155</b>
Units	<b>3.0</b>		

### Course Description

This introductory earth and space science course covers basic principles from the fields of geology, astronomy, oceanography, 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 meets once a week and is taught using a hybrid approach, partly as a normal lecture in the classroom during our normal meeting time, and partly as an online course, which you do on your own outside of class. During this time outside of class, you are required to complete online quizzes and other possible assignments for that week including a journal on natural disasters. There are online materials to help you complete the investigations and to prepare you for online quizzes, but the book is your best resource.

### 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 million 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

The Good Earth (2ed) by McConnell, D., and others (2010). New York McGraw-Hill. ISBN: 978 0 07 336936-5

Three scientific themes are emphasized throughout the text: 1) scientific literacy; 2) Earth Science and the human experience; and, 3) the science of global change. This book will help you learn earth science concepts and processes on your own and complement what we do in class.

The *Key Concepts and Terms List* is your guide to what is important (posted on Blackboard). If you revisit the chapter corresponding to the most recently finished lecture *after* we cover that topic, the material will be best retained.

Checkpoints are found on nearly every page in each chapter. These checkpoints consist of a wide variety of learning methods from construction of Venn Diagrams to filling in rubrics and constructing concept maps. Some of these will be assigned as weekly homework questions found in your class handbook and on lecture slides, and are a key component to doing well on the exams.

### 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.

Class time will not simply consist of me repeating via lecture everything that is in the book! It is your responsibility and obligation to complete the required readings prior to quizzes. Class time may be used for working on lecture assignments, clarifying written materials, introducing new material, small-group activities, discussions, videos, independent work projects.

**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.

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.

### 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.

- In-Class Assignments. In-class assignments will occur throughout the semester for various chapters. These assignments usually will be part of an activity that will reinforce what we have been covering in class, such as plotting location and size of earthquakes, evaluating asteroid impacts, etc. The in-class assignments will be due at the end of the class. Make sure to attend class or you will miss out on these activities, points that cannot be made up. There may be unannounced short assignments presented (in class) that will generally cover the practical application of course studies to our life (and hopefully answer the question: why do we need to know this?); or on recent events related to earth and space science. Another reason to show up for class as these cannot be made up!
- Online Quizzes: Quizzes for every chapter that we cover will be posted on Blackboard. The quizzes will cover information from the textbook and from any online materials. **Each of the online quizzes will be worth about 20 points.** See the *Quiz Schedule* at the end of this syllabus for due dates. You can use your textbook or your notes to answer these quizzes, but not another person. Each quiz will have a time limit of 45 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 Tuesday night at 11:59pm of each week.** No late or make-up quizzes.

- **Out of Class Assignments.** We will have various out of class assignments will occur throughout the semester for various chapters. These assignments usually will include online research on the current topic we are covering in class.
- **Exams:** Exams will be given after we have covered several similar chapters. Exams will be worth 100 points each. Exams will cover material presented in the class, textbook, homework, quizzes, and class discussion. Exams must be taken on the scheduled day. **There will be three (3) exams plus a comprehensive final exam on the last day of class. Only three exams will be included in your final grade, so if you miss one of the exams, you need to take the final exam to replace the missed exam. If your score on the first three exams are good, you do not have to take the final.** You can make up exams only if you have a note from a doctor, a letter from the university regarding your participation in a university-sponsored activity, a copy of a jury summons, etc. This legitimate proof for why you cannot attend class that day must be provided to the instructor as far in advance of the exam as possible in order to determine a time to make up the exam.
- **Research Paper:** A research paper on a topic covered in this class (earthquakes, volcanoes, geologic processes, climate, or other related topic) is required for this class. The research paper is due the last day of class. The research paper will be assigned about midway through the semester and will be due the final day of class. The research paper will be worth 100 points. You must submit one research paper. These reports must be at least 5 pages, double space, typewritten, with properly referenced and appropriate visual attachments (such as maps and diagrams) if needed. ***This work must be done on your own.*** We will go over proper scientific referencing procedures and presentation in class.

**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 = 88 – 100%  
B = 75 – 87.9%  
C = 60 – 74.9%  
D = 50 – 59.9%  
F = <49.9%

***I want to emphasize, it is important to show up to class 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 Blackboard. *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.

### 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 absences 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.

### Classroom Etiquette

- **Class Disruptions:** These disruptions are defined as activities that distract the instructor or other students from the course content. Such activities include talking or whispering, cell phones ringing, tardiness or whispering about another tardy student, noisily preparing to leave the class prior to the end of the period, etc. Disruptive students will be asked to leave the class. Students who disrupt or interfere with a class repeatedly may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the General Catalog.
- **Audio/Visual Recording:** Neither audio nor video recording will be permitted except under special circumstances prescribed by the DSPS. You are also not allowed to use the camera in your phone to record pictures or video, without expressed consent of the instructor.
- **Electronic Devices:** Cell phones and electronic devices must be turned off and put away during class unless otherwise directed by the instructor. This includes text messaging. If your work situation requires that you be on-call, please notify the instructor prior to class.
- **Food and Drink** are prohibited in all classrooms. Water bottles with lids/caps are the only exception. Additional restrictions will apply in labs. Please comply as directed.
- **Disruptive Students:** Students who disrupt or interfere with a class may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the General Catalog.
- **Children in the classroom:** Due to college rules and state laws, no one who is not enrolled in the class may attend, including children.

- **Use of Laptops In the Classroom:** You are not permitted to use laptops in class during lectures or during work on lecture assignments/checkpoints/exercises from your class handbook (one exception is if you are using an electronic book for class, then you are permitted to use your laptop only during work out of the class handbook). You may use your laptop during breaks only as long as you are not disturbing your neighbors. If you use your laptop during lecture you will lose all in-class points for the day; and if you continue to use your laptop during unauthorized times or are disrupting other students you will be asked to leave the classroom. If it is essential that you use your laptop to take notes during lectures please see me about this and we can possibly work something out.

### Academic Honesty

- **Plagiarism** is to take and present as one's own 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 or 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

### Additional Help – Discretionary Section and Language

Earth science is probably a very new concept to most students. There is a lot of information to absorb and we are only touching the tip of the iceberg. If you are having difficulty understanding the course work, please contact me immediately. My job is to help you get the most out of this class and hopefully take something from it that will help you in the future. You cannot receive help if you do not ask.

Also, the college has learning centers, disability resource centers, and counseling centers to address the various needs of students.

- **Blackboard** support center: <http://bbcrm.edusupportcenter.com/ics/support/default.asp?deptID=8543>
- **Learning Labs:** There are several 'labs' on campus to assist you through the use of computers, tutors, or a combination. Please consult your college map for the Math Lab, Reading & Writing Lab, and Learning Services (library). Please speak to the instructor about labs unique to your specific program
- **Library Services:** There is more to our library than just books. You have access to tutors in the learning center, study rooms for small groups, and online access to a wealth of resources.

### Disabled Student Programs and Services (DSPS)

Any student with a documented disability who may need educational accommodations should notify the instructor or the Disabled Student Programs and Services (DSP&S) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313 if you feel you need to be evaluated for educational accommodations.

### **Student Counseling and Health Services**

Students have counseling and health services available, provided by the pre-paid Student Health Fee. We now also have a fulltime mental health counselor. For information see <http://www.imperial.edu/students/student-health-center/>. The IVC Student Health Center is located in the Health Science building in Room 2109, telephone 760-355-6310.

### **Student Rights and Responsibilities**

Students have the right to experience a positive learning environment and due process. For further information regarding student rights and responsibilities please refer to the IVC General Catalog available online at [http://www.imperial.edu/index.php?option=com\\_docman&task=doc\\_download&gid=4516&Itemid=762](http://www.imperial.edu/index.php?option=com_docman&task=doc_download&gid=4516&Itemid=762)

### **Information Literacy\**

Imperial Valley College is dedicated to help students skillfully discover, evaluate, and use information from all sources. Students can access tutorials at <http://www.imperial.edu/courses-and-programs/divisions/arts-and-letters/library-department/info-lit-tutorials/>

### **Anticipated Class Schedule / Calendar**

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

Imperial Valley College Course Syllabus – Course Title and number

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<b>Date or Week</b>	<b>Activity, Assignment, and/or Topic</b>	<b>Pages/ Due Dates/Tests</b>
Week 1 August 20	Syllabus & Introduction Chapter 1 – Introduction to Earth Science	
Week 2 August 27	Chapter 2 – Earth in Space	
Week 3 September 3	Chapter 3 – Near Earth Objects	
Week 4 September 10	Chapter 4 – Plate Tectonics	
Week 5 September 17	Chapter 4 – Plate Tectonics	Test #1 – Chapters 1-4
Week 6 September 24	Chapter 5 – Earthquakes	
Week 7 October 1	Chapter 6 – Volcanoes	
Week 8 October 8	Chapter 7 – Rocks and Minerals	
Week 9 October 15	Chapter 8 – Geologic Time	
Week 10 October 22	Term Paper Discussion	Test #2 – Chapters 5-8
Week 11 October 29	Chapter 10 – Landslides	
Week 12 November 5	Chapter 15 – Weather	
Week 13 November 12	Chapter 16 – Climate	
Week 14 November 19	Chapter 17 – Global Change	
Week 15 November 26	Holiday – No Class	
Week 16 December 3		Test #3 – Chapters 10-17
Week 17 December 10	Final Exam	Final Exam