

Geology 110: Earth and Space Science (3 Credits)

Fall 2012

Instructor: Kevin Marty

Office Hours: M,W,Th from 12-1 pm; T from 5-6 pm. Office hours held in Room 2776, new science building.

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Spring Geology 110 courses: CRN 10012 and 10013 on Tuesday from 6:30-9:40 pm in room 2734; CRN 10090 on Wednesday from 8:30-11:45 am in room 2733.

Class Text Book: *The Good Earth* Introduction to Earth Science, 2nd edition, David McConnell (and others); ISBN: 978-0-07-336936-5

"You need your book right away"

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, the 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.

Course Objective: By the end of this course, students will gain a better understanding and appreciation of their physical environment and the knowledge of how the Earth's systems (hydrosphere, biosphere, atmosphere and geosphere) work and interact. Students will also gain an understanding of the planets.

Note: you will need to bring a 100 question (50 on each side) **SCANTRON** for each test...thank you!

Week: 2012	Lecture Coverage/Assignments	Test Dates/Assignment due dates
Aug 20-24	introduction; objectives; go over syllabus Assign: I will hand out Assignment 1 and Assignment 2 (not due for two weeks); please NOTE: you will need to print out the remaining assignments and bring them to class with you (after Assignment's 1 and 2). If you lose assignment 1 or 2,	Due: Introductory post due by Sunday night through Blackboard.

	<p><u>they are also linked to the syllabus.</u></p> <p>CURRENT EVENTS ASSIGNMENT: Part 1-Finding Disaster Information on the Internet (due October 2-Tuesday Class or October 3-Wednesday Class)</p> <p>CURRENT EVENTS ASSIGNMENT: Part II-Natural Disaster Tracker (due November 27-Tuesday Class or November 28-Wednesday Class)</p> <p><u>CLICK HERE FOR CURRENT EVENTS ASSIGN</u></p> <p>Assign: Read Chapter 1 (Introduction to Earth Science)</p> <p>Assignment 1 (due in two weeks)</p>	
<p>Aug 27-31</p>	<p>Discuss Chapter 1: Introduction to Earth Science (PowerPoint)</p> <p>Assign: Read Chapter 2; Please bring Assignment 1 and 2 to class this week</p> <p>Assignment 2 (due in one week)</p>	<p>animation: Layered Earth</p>
<p>Sept 3-7 (no class Monday, Sept 3-Labor Day)</p>	<p>Discuss Chapter 2: Earth in Space (PowerPoint)</p> <p>Assign: Read Chapter 3; Print out (linked below) and bring Assignment 3 to class this week</p> <p>Assignment 3 (due in one week)</p>	<p><u>*Due: Assignment 1</u></p> <p><u>*Due: Assignment 2</u></p> <p>*Due: quizzes through blackboard for chapter's 1 and 2 (two quizzes). All quizzes throughout the semester are due on Sunday nights by 11:59 pm.</p> <p>Virtual Field Trips:</p> <p>Astronomy Live Orbital Fluctuations , The Sun , Google Moon Planetary Photojournal Virtual Space</p>

		Tour Virtual Museum of the History of the Telescope
Sept 10-14	<p>Discuss Chapter 3: Near-Earth Objects (PowerPoint)</p> <p>Assign: Read Chapter 4; Print out (linked below) and bring Assignment 4 to class this week</p> <p>Assignment 4 (due in one week)</p>	<p>*Due: Assignment 3</p> <p>*Due: quiz through blackboard for chapter 3.</p> <p>animations: Birth of the Moon Solar System Formation Virtual Field Trips: The Surface of Mars Mercury Google Mars The Wetumpka Impact Structure</p>
Sept 17-21	<p>Discuss Chapter 4 (Plate Tectonics)</p> <p>Assign: Read Chapter 5; Print out (linked below) and bring Assignment 5 to class this week</p> <p>Assignment 5 (due in one week)</p>	<p>*Due: Assignment 4</p> <p>*Due: quiz through blackboard for chapter 4.</p> <p>animations: Pangea Breakup, 2, Subduction Zone, Plate Boundary, Ocean Ocean, Ocean Continental, Continental Continental, Fault Zones, Divergent Plate Boundary, Tectonic System, Plate Boundaries</p>
Sept 24-28	<p>Discuss Chapter 5 (Earthquakes)</p> <p>Assign: Read Chapter 6; Print out (linked below) and bring Assignment 6 to class this week</p> <p>Assignment 6 (due in one week)</p>	<p>*Due: Assignment 5</p> <p>*Due: quiz through blackboard for chapter 5.</p> <p>Tsunami, Locating an Earthquake, S wave P wave, Body Waves</p>
Oct 1-5	<p>Discuss Chapter 6 (Volcanoes and Other Mountains)</p> <p>Assign: Read Chapter 7; Print out (linked below) and bring Assignment 7 to class this week</p> <p>*Due: Current Events Assignment Part 1: Finding Disaster Information on the Internet</p> <p>Assignment 7 (due in two weeks)</p>	<p>*Due: Assignment 6</p> <p>*Due: quiz through blackboard for chapter 6.</p> <p>*Due: Current Events Assignment Part 1: Finding Disaster Information on the Internet</p> <p>Hot Spot Volcanic Chain</p>

Oct 8-12	<p>Notebook 1 Due (Assignments 1-6)</p> <p>Test review before giving test mid-term; no lecture this week</p>	<p>Notebook 1 Due (Assignments 1-6)</p> <p>**Mid-Term Test over Chapters 1-6 (assignments 1-6)**</p> <p>*No quiz due this week</p>
Oct 15-19	<p>Discuss: Chapter 7 (Rocks and Minerals)</p> <p>Assign: Read Chapter 8; Print out (linked below) and bring Assignment 8 to class this week</p> <p>Assignment 8 (due in one week)</p>	<p>*Due: Assignment 7</p> <p>*Due: quiz through blackboard for chapter 7.</p>
Oct 22-26	<p>Discuss: Chapter 8 (Geologic Time)</p> <p>Assign: Read Chapter 13; Print out and bring Assignment 9 (linked below) to class this week (Note: this covers chapter 13)</p> <p>Assignment 9 (covering Chapter 13; due in two weeks)</p>	<p>*Due: Assignment 8</p> <p>*Due: quiz through blackboard for chapter 8.</p>
Oct 29-Nov 2	<p>Discuss: Chapter 13 (Oceans and Coastlines)</p> <p>Assign: Read Chapter 14; Print out (linked below) and bring Assignment 10 to class this week (Note: this covers chapter 14)</p> <p>Assignment 10 (covering Chapter 14; due in one week)</p>	<p>*Due: Assignment 9 (Chapter 13)</p> <p>*Due: quiz through blackboard for chapter 13.</p> <p>Atolls, Tides, More Tides, Orbital (wave) Motion, Deep Ocean Circulation, Shallow Wave Motion</p>
Nov 5-9	<p>Discuss: Chapter 14 (The Atmosphere)</p> <p>Assign: Read Chapter 15; Print out (linked below) and bring Assignment 11 to class this week (Note: this covers chapter 15)</p>	<p>*Due: Assignment 10 (Chapter 14)</p> <p>*Due: quiz through blackboard for chapter 14.</p> <p>General Circulation,</p>

	Assignment 11 (covering Chapter 15; due in one week)	Pressure versus Temp, Reason for the Seasons
Nov 12-16 (no class Monday, Nov 12-Vet Day)	<p>Discuss: Chapter 15 (Weather Systems)</p> <p>Assignment 12 (Climate Change)...NOTE: this assignment not from the textbook, but from the "backgrounders" in table below. Also NOTE that while the assignment is not from the book, the quiz required next week will be from information in your book (and summarized in the online module as usual).</p>	<p>*Due: Assignment 11 (Chapter 15)</p> <p>*Due: quiz through blackboard for chapter 15.</p> <p>Warm Front, Cold Front, Occluded Front, Thunderstorm</p>
Nov 19-23 (Thanksgiving Holiday Th-Sat)	Finish lecture if needed; video.	
Nov 26-30	<p>Finish Lecture from previous week, REVIEW for FINAL TEST</p> <p>*Due: Current Events Assignment Part II:-Natural Disaster Tracker</p>	<p>*Due: Climate Change Assignment 12; please read assigned "backgrounders" attached in table (below) to complete this assignment.</p> <p>*Due: Current Events Assignment Part II:-Natural Disaster Tracker</p> <p>*No quiz due this week</p>
Dec 3-7 (Final's Week)	<p>Notebook 2 Due (Assignments 7-12)</p> <p>**FINAL TEST over Chapters 7, 8 and 13-15 and assigned backgrounders (assignments 7-12)**</p>	<p>Notebook 2 Due (Assignments 7-12)</p> <p>**FINAL TEST over Chapters 7, 8 and 13-15 and assigned backgrounders (assignments 7-12)**</p>

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Below are videos we may view in class and are also linked to the syllabus for your convenience. For example, we will view "Mystery of the Megaflood" in class, but it is also linked here if you want to view it partially or entirely again.

Hurricane Katrina

Part 1: <http://ivci4.imperial.edu:1004/sci/kevinmarty/hurricaneCAM-0.html>

Part 2: <http://ivci4.imperial.edu:1004/sci/kevinmarty/hurricaneCAM-1.html>

Part 3: <http://ivci4.imperial.edu:1004/sci/kevinmarty/hurricaneCAM-2.html>

Part 4: <http://ivci4.imperial.edu:1004/sci/kevinmarty/hurricaneCAM-3.html>

The Tsunami that Shook the World

Part 1: <http://ivci4.imperial.edu:1004/sci/kevinmarty/tsunami-0.html>

Part 2: <http://ivci4.imperial.edu:1004/sci/kevinmarty/tsunami-1.html>

Part 3: <http://ivci4.imperial.edu:1004/sci/kevinmarty/tsunami-2.html>

Part 4: <http://ivci4.imperial.edu:1004/sci/kevinmarty/tsunami-3.html>

Krakatoa

Part 1: <http://ivci4.imperial.edu:1004/sci/kevinmarty/krakotoastreaming-0.html>

Part 2: <http://ivci4.imperial.edu:1004/sci/kevinmarty/krakotoastreaming-1.html>

Part 3: <http://ivci4.imperial.edu:1004/sci/kevinmarty/krakotoastreaming-2.html>

Part 4: <http://ivci4.imperial.edu:1004/sci/kevinmarty/krakotoastreaming-3.html>

Mystery of the Megaflood

Part 1: <http://ivci4.imperial.edu:1004/sci/kevinmarty/megafloodcam-0.html>

Part 2: <http://ivci4.imperial.edu:1004/sci/kevinmarty/megafloodcam-1.html>

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Below are links for further explanation on methods, concepts, etc., that may help you with the material in this class; links to Backgrounders and the climate change assignment.

The Scientific Method additional reference	Key Concepts and Terms , "The Good Earth" , all chapters	Concept Maps, Venn Diagrams and Rubrics
Backgrounders (for Assignment 12): #1 , #2 , #3 , #4 , #5 , #6 , #7 , #8 , #9 ,	Backgrounders (for Assignment 12): #10 , #11 , #12 , #13 , #14 , #15 , #16 , #17	

Please Note: Not all chapters in the text book are assigned and not all chapters (that are assigned) will be covered in their entirety; furthermore, as the class progresses, assignments may be altered. There may be reading or written assignments to replace or supplement the text material or to learn about current events (so it is important to show up to class; *you are responsible* for knowing any changes made that will be announced during class hours. If you miss a class, please find out from me or a classmate if any changes were made, including new assignments or a change in due dates, etc).

I want to emphasize, it is important to show up to class and do your own work (even while working with others) and ask questions if you do not understand any concepts.

Assignments and Notebooks: the assignments are assigned each week (see syllabus table for due dates) over approximately 12 chapters (assignments are linked to the syllabus table above). There will be time to work on the assignments in class as a group exercise (**but don't wait to begin your assignments on the day they are due; class time is to complete questions you need help with; also, i may collect and evaluate assignments at the beginning of class periods**).. **I will provide the first two Assignments, but after the first two PLEASE PRINT OUT AND BRING THE ASSIGNMENT TO BE WORKED ON TO CLASS WITH YOU EACH WEEK**.. You should keep your assignments in a notebook and bring it to class every period. As mentioned above, I may collect and evaluate your homework during any given week. These are your study guides for the Mid-term and Final tests (along with the online quizzes), so you will want to complete and understand (and ask questions if you don't) the concepts presented in your assignments. Please keep your notebooks neat and organized, I will collect these during the Mid

term (Notebook 1 containing assignments 1-6) and during the Final (Notebook 2 containing assignments 7-12). Provide the *questions on the assignments with your answers*, and your answers must be **HANDWRITTEN** (and make sure I can read your writing, so write as neatly as you can). It would be best to print out the assignments with adequate space to provide your handwritten answers; again, the assignments are linked to the syllabus table above...Keep your notebooks and assignments organized, and please just place them in a folder when turning them in during the Mid term and Final.

There are **extra credit questions** available in your assignments: if you do an extra credit question, please turn those in with your notebook.

Note (one more time!): Please keep your assignments updated and bring them to lecture period every week. Do not begin these assignments during the class period they are due (or you could lose credit which could drop your overall score down one grade). Your notebooks, which will contain these assignments, will be collected during the Mid term and Final Tests.

Tests/Quizzes: Two tests (a Midterm and non-comprehensive Final) will be given during the semester (see syllabus table for test dates). You will be tested over material from your textbook that we will cover in class (and many of the questions will be directly related to your assignments and quizzes, discussed above). PowerPoints for the lectures are available by clicking on the chapter links in the syllabus table. If you read the chapters and complete your assignments on time and ask questions on concepts you don't understand, you should do well on the tests. It is important to do the assignments on your own (you can work with others, but don't copy their work) in order to understand the material. *Their are also weekly quizzes scheduled (you will do these quizzes online through Blackboard). The quizzes are related to the material being covered that week. Assignments in Blackboard will contain material to read prior to taking each quiz (the material is from your textbook but narrowed down to help you with the quizzes-in other words, study these learning modules to answer the questions on the quizzes). You may also find some of the quiz questions on your mid term and final tests. We will go over how to access this website in class.*

The Mid-term and Final will consist of approximately 80-90 questions (mostly multiple choice with some short answer/diagrams/etc., as found in your homework)...many of your homework questions (which are not multiple choice) will be presented in multiple choice format...please do not just memorize your homework answers: strive to understand the concepts since the test questions will cover similar material but changed to evaluate your understanding of the subject.

Current Events Assignment: to be discussed in class, this assignment is given in two parts. Part I helps you find disaster information on the internet. Part II is a natural disaster tracking assignment which benefits from Part I (e.g., disaster tracking techniques, websites and several of the questions presented in Part I will help you with Part II). See syllabus for links and due dates. 65 points total for both parts of this assignment.

Blackboard: We will be using blackboard to enhance this course. You will have quizzes and several posts due through blackboard and can obtain your syllabus, announcements, current

grade and other information through this system. This is new to me also, I am learning blackboard so we will discuss this in class as the semester moves on, and new posts may be added during the semester.

Grading: All work will be weighted equally (e.g., assignments, tests, other homework). **There are approximately 400 total points possible in this course: 275 points from tests and quizzes and posts (70% of your grade); 65 points from the Current Events Assignment (15% of your grade); 60 points from weekly assignments that are kept in your notebook (15% of your grade).** Therefore, I will add up your total points and determine where you are percentage-wise to the total points possible. The grading scale is as follows: **90-100%=A; 79-89%=B; 68-78%=C; 57-67%=D; there may be a slight curve at the end of the semester for final grades.**

Field Trips: there will be one optional (extra credit) field trip...we will work out the details of this trip in class.

Attendance: Regular class attendance is important for students to accomplish the work necessary to successfully complete this course. You are responsible for all material presented in class even if you miss for a legitimate reason (e.g., illness, family emergency, etc.). Please notify me in advance if you cannot attend, and arrange to get class notes from another student. In-class assignments, as well as scheduled quizzes, labs and field trips cannot be made up if missed (except by legitimate reasons, which are few). With this being said, students are expected to attend every class session. Any student who misses the first class will be dropped. Students may be dropped at instructor discretion if they miss more than a week of class hours continuously.

Cell Phones: use not allowed while you are in the classroom. If an emergency comes up, please step out of the room to use your cell phone (and not disrupt the class). If you use your cell phone for any reason in the classroom during class hours you will be asked to leave the room (and not come back that day).

Computers: Computer use not allowed during lectures. Computer use is allowed in the classroom when you are working in groups or during breaks, etc., but not while the lecture is going on.

Disruptive Students: Most of you are here to learn, but some students are not serious. To preserve a productive learning environment, students who disrupt or interfere with a class may be sent out of the room and told to meet with Sergio Lopez, Dean of Student Affairs and Campus Disciplinary Officer, before returning to continue with coursework. Mr. Lopez will follow disciplinary procedures as outlined in the General Catalog.

Cheating and Plagiarism: IVC expects honesty and integrity from all students. A student found to have cheated on any assignment or plagiarized will receive a zero for the assignment and sent to Disciplinary Officer Sergio Lopez. A second occurrence of cheating or plagiarism may result in dismissal from class and expulsion from IVC as outlined in the General Catalog.

Disabled Student Programs and Services: 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. DSP&S is located in room 2117 of the Health Sciences Building, phone (760) 355-6312. **Please let me know if you have a disability and need special arrangements in class.**

SEMESTER TASK SUMMARY:

Mid term Test: 100 pts (25%)

Final Test: 100 pts (25%)

Notebook 1: 30 points (7.5%) (this includes possible weekly checks of notebook assignments)

Notebook 2: 30 points (7.5%) (this includes possible weekly checks of notebook assignments)

Twelve Quizzes and several Posts: 75 points (20%)

Current Events Assignment Part 1: 25 points (5%)

Current Events Assignment Part 2: 40 points (10%)

Total Points: ~400

Institutional Student Learning Outcomes: ISLO 1= communication skills; ISLO 2= critical thinking skills; ISLO 3= personal responsibility; ISLO 4= information literacy; ISLO 5= global awareness.

Course Student Learning Outcomes: ISLO 2: critical thinking skills.