

## PHYSICAL GEOLOGY COURSE SYLLABUS

Lecture Hours: 3 (1914.00)

Message phone: (760) 757-2121 x7879 (San Elijo Campus office)

Office Hours: 11:00 AM – 12:00 noon Wednesdays, SEC503

E-mail address: pfarquharson@miracosta.edu

Prerequisites: None

Instructor's class website: <http://physical.geology-guy.com/>

### **Required Textbook**

*Earth, An Introduction to Physical Geology*, Tarbuck & Lutgens, Ninth Edition, Prentice-Hall. ISBN-13: 978-0-13-156684-2  
ISBN-10: 0-13-156684-9

### **Optional Regional Geology Resource Books**

*The Rise and Fall of San Diego: 150 Million Years of History Recorded in Sedimentary Rocks*, Patrick L. Abbott, 1999, Sunbelt Publications. ISBN: 0-932653-31-6

*The Peninsular Ranges: A Geological Guide to San Diego's Back Country*, Michael J. Walawender, 2000, Kendall-Hunt Publishing. ISBN: 0-7872-6440-7

### **Instructor Availability**

I am a friendly, helpful, approachable person. My office hours will be on the San Elijo Campus on Wednesdays from 11:30 AM until 12:30 PM. For other communications, E-mail is preferred, with backup method of the telephone.

### **Course Description (2008-09 MCC Catalog)**

*"Physical geology introduces the processes at work changing the earth today. Within the context of global tectonics, it explores the origins of rocks and minerals and the dynamics of processes such as igneous activity, seismicity, and crustal deformation driven by the release of earth's internal heat. It also examines how air, water and ice move in response to gravity and energy from the sun, sculpting earth's surface by eroding, transporting and depositing weathered rock materials."* Acceptable for credit: CSU, UC.

### **Course Prerequisites**

None

### **Student Learning Outcomes ("SLO's")**

Students will be able to:

- Diagram the Earth's interior layers, and compare and contrast the major features of those layers.
- Explain the theory of plate tectonics and relate it to the major features of the Earth's surface.
- Compare and contrast igneous, metamorphic and sedimentary rocks and relate them to one another using the rock cycle.
- Relate major rock deformation features to the geologic processes that cause them.
- Compare and contrast the geologic processes that modify the earth's surface (i.e. weathering, mass wasting, stream, glacier, desert and shoreline systems).

### **Instructor's Course Objectives**

I hope to help you to discover:

- what geology is and what geologists do.
- two words: PLATE TECTONICS
- an appreciation of the immensity of geologic time and how this time is often punctuated by instantaneous catastrophic events such as earthquakes, tsunamis, floods, landslides and volcanic eruptions.
- an understanding of how a variety of minerals and rocks are produced in the earth's crust.
- the geologic origins of important mineral resources and the distribution of these resources on the earth.
- an appreciation of how much we have learned about geologic processes since I began my geological studies forty-four (!) years ago.
- The "big picture" of our region of planet Earth – SW U.S.A. and NW Mexico

## **How You Will Succeed in this Course**

- Read and understand the text, paying close attention to:
  1. the pictures and their captions
  2. the “boxes” of information scattered here and there
  3. the CD that comes with the text
  4. the chapter summaries, review questions, and key terms
  5. the Tarbuck and Lutgens web site (<http://www.prenhall.com/tarbuck/>)
  6. the possibility of a "pop" quiz now and again
- Pay attention to the videos shown in class and any associated web sites
- Attend all lectures assiduously and **take notes** relentlessly
- Be observant of your surroundings – ask yourself “Why?”
- Pay close attention to all instructions on all tests and the research project
- DO NOT rely on the PowerPoint presentations on the class web site, as these are merely outlines

## **General Requirements**

- Attendance is very important and required. Important material will be covered in each class session. As a result, an absence from even one class meeting will mean catching up on lots of information. Each student is expected to attend every class meeting and arrive punctually. In case of extreme emergency, the student should file a petition for a Leave of Absence in the Admissions Center. A student will be dropped when unexcused absences exceed three hours (2 classes) or when total absences exceed six hours (4 classes). Excused absences will be granted for illness and family emergencies only. To qualify, notify the instructor about the absence, giving the reason.
- **PLAN TO ARRIVE EARLY FOR CLASS!!** I understand that, occasionally, things run late. However, do not make a habit of arriving late or leaving early as it causes a disruption for me and for other students in the class. If you do arrive late, please place any assignments in the appropriate place near the classroom door and quietly take a seat in the rear of the room or nearest the door. Do not disrupt class by turning in homework or picking up handouts during class session.
- Excessive tardiness (includes leaving class early) is not allowed. Upon the fourth tardy, the student may be dropped from the class.
- The last day to add a class is February 6<sup>th</sup>, and the last day to withdraw from class without receiving a "W" grade is February 6<sup>th</sup>. Last day to withdraw and receive a 'W' is April 23<sup>rd</sup>.
- Each student is expected to conduct herself / himself in a professional manner. Inappropriate conduct in the classroom includes talking, eating, drinking, wisecracking, sleeping, inappropriate disruptions, text messaging, etc. Please respect the rights of others to enjoy a quiet and successful learning environment. If I feel that your behavior is disrupting the class, you will be asked to leave.
- Cellular telephones and pagers, and other noise-makers: turn ‘em off!
- Visitors allowed only with instructor approval.
- Tape or digital recordings are encouraged, if it helps you learn.
- Food and beverages are not allowed in the classroom. Plastic water bottles are allowed but clean up behind yourself.

## **Academic Misconduct:**

Section 41301 of Title V of the California Code of Regulations defines academic misconduct as “cheating or plagiarism in connection with an academic program at a campus.” Examples of cheating include using notes or copying others’ work during an exam, using old exams and study guides to prepare for an exam, and falsifying data or records for an exercise. Examples of plagiarism include copying other students’ answers or, when working in collaborative groups, not stating answers in your own words, based on your own understanding.

## **Exams**

All exams will be completed in Blackboard. Tests will be posted on a Monday, completed by the following Monday, at 11:59 PM. If you miss the 11:59 PM cut-off time, you may turn in a special “make-up” exam, and you will lose 5 points per class period that the test is late.

Exams will be a combination of objective (i.e., multiple choice, fill in the blank, matching, etc.) and short essay questions. Be sure to answer the essays completely, in standard English, and in complete sentences. After you complete the test, go back and check your work, making sure that each objective question has an answer, and that all parts of the essay questions have been answered.

**Miss the final exam, receive an “F” in the class.**

Pop quizzes can **not** be made up – you snooze, you lose.

### ***Homework Assignments***

In addition to the midterm exams, there will be homework assigned in class that may not be posted to Blackboard or the web site. These assignments may consist of researching some specific subject on the Internet or in the library. These also may not be made up without a confirmed excusal.

### ***Research Projects***

Research projects must be turned in on the due date to qualify for full credit. They must be ready to be graded, and submitted into Blackboard, preferably Microsoft Word or PowerPoint, OpenOffice or Adobe Acrobat (PDF) format. Research projects turned in late will be marked down 10 percent for each week late. Partial weeks will be prorated. **Also, no research project, no passing grade!**

There are two possibilities for the research project: a traditional research paper (“term paper”) on a specific topic of a geological bent, **or** a photo research paper, which requires imagination, initiative, and considerable research. Details may be found on the class web site, and in Blackboard.

***Extra Credit Assignments - NO extra credit assignments will be offered. Please don't ask!!!***

### ***Field Trips***

Optional field trips will be held to observe local geology. The trips will require light walking, taking notes, sketching, and class discussion. The dates for these trips will be announced.

### ***Students with Disabilities***

Students with disabilities, whether physical, learning, or psychological, who believe that they may need accommodations in this class, are encouraged to contact Disabled Students Programs & Services as soon as possible to ensure that such accommodations are implemented in a timely manner. Authorization from DSP&S is required before any accommodation can be made. Their phone number is 795-6658 and they are located in Building 3000-Student Services, adjacent to Parking lot 3C.

### ***Grades***

Grades are calculated as follows: A = 90-100%, B 80-89%, C 68-79%, D = 55-67%, F < 54%.

Course grades are calculated on:

Mid-term Exams, quizzes → 60%                      Research Project → 25%                      Final Exam → 15%

### ***Video credits (for possible viewing in or out of class):***

1. Intelcom, 1992. *Earth Revealed*. Series of 26 half-hour video programs and coordinated books. ISBN 1-55946-443-7.
2. Living Rock DVD, 2002. *Living Rock: An Introduction to Earth's Geology*. An educational program about Earth's geology
3. National Geographic, 1990. *Volcano! Nature's Inferno*. Part of National Geographic's *Restless Earth* collection.
4. San Diego State University, 2001. *Rise and Fall of San Diego*. Part of Pat Abbott's "Written In Stone" series.
5. San Diego State University, 2004. *Earthquake Country – Los Angeles*. Part of Pat Abbott's "Written In Stone" series.
6. Stephen Low Distribution Inc., 2005. *Volcanoes of the Deep Sea*. A 45-minute IMAX movie showing black smokers and life at various spreading centers as seen from the submersible Alvin.
7. SlingShot Entertainment, 1999. *Grand Canyon: The Hidden Secrets*. a 38-minute IMAX movie.
8. Summerhays Films, 2004. *Ocean Oasis*. A 50-minute IMAX movie highlighting the environment of the Baja California peninsula and the Sea of Cortez. Produced in part by the San Diego Natural History Museum.

## Schedule

<i>Month</i>	<i>Date</i>	<i>Day</i>	<i>Chapt</i>	<i>Subject</i>	<i>Milestones, Possible Videos</i>
January	25	Mon		Class Introduction	
	27	Wed	1	Introduction to Geology	<b><u>Introductory Quiz Due</u></b>
February	1	Mon	2, 12	Plate Tectonics	"Living Rock" <sub>2</sub>
	3	Wed		Plate Tectonics (continued)	
	8	Mon		Plate Tectonics (continued)	
	10	Wed		Plate Tectonics (continued)	"Volcanoes of the Deep Sea" <sub>7</sub>
	15	Mon		<b><i>HOLIDAY - no class</i></b>	<b><u>Lincoln's / Washington's Days</u></b>
	17	Wed		Plate Tectonics (continued)	
	22	Mon	3	Matter and Minerals	
	24	Wed	4	Igneous Rocks	"Volcano! Nature's Inferno" <sub>3</sub>
March	1	Mon	5	Volcanic Activity	<b><u>Exam 1 Due</u></b>
	3	Wed		Volcanic Activity (continued)	
	10	Mon	6	Weathering and Soil	
	12	Wed	7	Sedimentary Rocks	
	17	Mon	8	Metamorphic Rocks	
	19	Wed	9	Geologic Time	
	22	Mon	10	Crustal Deformation	"Killer Quake" <sub>4</sub>
	24	Wed	11	Earthquakes	<b><u>Exam 2 Due</u></b>
	29	Mon		<b><i>SPRING BREAK - no class</i></b>	
	31	Wed		<b><i>SPRING BREAK - no class</i></b>	
April	5	Mon		Earthquakes (continued)	"Earthquake Country L.A." <sub>5</sub>
	7	Wed	13	Divergent Boundaries: Sea Floors	"Faces of Earth: Assembling America" <sub>8</sub>
	12	Mon	14	Convergent Boundaries: Mountain Building	
	14	Wed	15	Mass Wasting	
	19	Mon	16	Running Water	
	21	Wed	17	Groundwater	
	26	Mon	18	Glaciers	
	28	Wed	19	Deserts	
May	3	Mon	20	Shorelines	<b><u>Exam 3 Due</u></b>
	5	Wed	21	Global Climate Change	
	10	Mon		Global Climate Change (continued)	"Ocean Oasis" <sub>10</sub>
	12	Wed	22	Geologic Development of the San Diego Region	<b><u>Research Project Due</u></b>
	17	Mon	23	Energy and Mineral Resources	
	19	Wed		The Grand Finale !!!	"Grand Cyn: Hidden Secrets" <sub>9</sub>
	24	Mon		12:00 noon – 2:00 PM → Room 406	<b><u>FINAL EXAM DUE</u></b>