

EARTH SCIENCE 100

Fall 2012

Class #40271 – Mo, We 10:00am - 11:15pm Location UNIV 100 08/27/12 – 12/15/12

Class #40273 – Mo, We 11:30am - 12:45pm Location UNIV 100 08/27/12 – 12/15/12

(Satisfies the earth science content requirement for candidates in the Multiple Subject Teaching Credential Program)

Instructor: P. Anderson **Office Hours:** TBA.

E-mail: panderso@CSUSM.edu

Home page: <http://courses.csusm.edu/es100pa/>

Required Text: EARTH SCIENCE 13/e, By: Tarbuck, Lutgens and Tasa.

ISBN 13: 9780321763563 (This is a bundled package only available at CSUSM bookstore. If you purchase the book elsewhere it will not contain the *optional* ancillaries contained in the bundled package. This bundle includes: Quick Study Card for Earth Science, Student Lecture Notebook, and the Study Guide for Earth Science all for the price of the new book alone.)

The accompanying companion webpage is linked from my webpage. There you will find many useful items such as practice quizzes, as well as other student support items. It is strongly suggested that you make use of this resource. "Work smarter, not harder!"

Materials: Rock and mineral set, Cost: \$15 .00 available at Discount Campus Books (Not mandatory, but you will probably want this!).

Only students who are officially registered may participate in this class. If you are given a permission code to add this class, you must officially add the class.

Course Objectives

As a survey course, the content will provide a foundation in basic Earth Science concepts to include rocks, minerals, plate tectonics, water cycle, geology, geologic time, Oceanography, astronomy, and political aspects of Earth Science. Some topics include:

- What is the chance of San Diego getting hit with a tsunami?
- What are "El Niño" and "La Niña"?
- What causes an eclipse?
- Why do some mountains blow their tops?
- What is the difference between a rock and a mineral?
- Why are our local bridges being retrofitted for future earth quakes?
- Why does California have frequent earthquakes where as the east coast does not?
- What makes a mountain?
- Why does the earth have seasons?
- What can our oceans and sea floor sediments tell us about global warming?
- Why is the Ocean and Atmosphere interrelated and how does one affect the other?
- What fuels a hurricane and why are they more abundant on the East coast?

Because of the diversity of the subject matter, it is not possible to cover all areas with equal emphasis or in a comprehensive manner. The main point is to gain an understanding and appreciation of the dynamic processes and inter-related systems that exist within Earth Science. All readings are REQUIRED before class. Start with the chapter summaries. Review key terms and then read the chapter. Answer the review questions after reading. The lectures and films are only intended to augment and clarify the readings. Unit outlines are available on my webpage.

Note: Instructor is **NOT** responsible for lost, un-received/undelivered, or corrupt e-mails or e-mailed files. All files **MUST** be virus free. Files containing viruses will be dumped to trash.

COURSE SCHEDULE (tentative)

| Date Week of | Topic | Textbook Unit - Chapter | Earth Revealed Films |
|--------------------|--|-------------------------------|--|
| 8/27 8/29 | Syllabus, class overview. Maps <u>Introduction to Earth Science</u> | 1-1 | |
| 9/3 9/5 | ***Labor Day Holiday*** <u>Minerals: Building Blocks of Rocks</u> | 1-2 | <u>1, 12,</u> <u>14, 17,</u> <u>18</u> |
| 9/10 9/12 | <u>Rocks: Materials of the Solid Earth</u> <i>Rock and Mineral activity Rock Cycle activity</i> | 1-3 | |
| 9/17 9/19 | <u>Weathering, Soil, and Mass Wasting</u> <u>Running Water and Groundwater</u> <u>Glaciers, Deserts, and Wind</u> | 2-4 2-5 2-6 | <u>15, 16, 19, 20,</u> <u>21, 22, 23</u> |
| 9/24 9/26 | <u>Plate Tectonics</u> (<i>USGS: This Dynamic Earth</i>) <u>Earthquakes and Earth's Interior</u> | 3-7 3-8 | <u>3, 4, 5, 6, 7, 8, 9,</u> <u>13, 25</u> |
| 10/1 10/3 | Earthquakes cont. <u>The Ocean Floor</u> and Tsunamis (Lecture) | 5-13 | |
| 10/8 10/10 | <u>Volcanoes and Other Igneous Activity</u> <u>Mountain Building</u> | 3-9 3-10 | |
| 10/15 10/17 | <u>Geologic Time</u> <u>Earth's History: A Brief Summary</u> | 4-11 4-12 | <u>10, 11, 17</u> |
| 10/22 10/24 | <u>The Atmosphere: Composition, Structure, and Temperature</u> Surface Ocean Currents (Lecture) | 6-16 | |
| 10/29 10/31 | Surface Ocean Currents cont. Gateways to Glaciations (<i>intro</i>) | | |
| 11/5 11/7 | <u>Moisture, Clouds, and Precipitation</u> <u>Ocean Water and Ocean Life</u> | 6-17 5-14 | <u>24</u> |
| 11/12 11/14 | ***Veterans day Holiday*** <u>The Dynamic Ocean Moon phases and tides</u> (Lecture) | 5-15 | |
| 11/19 11/21 | Tides (cont) Gateways to Glaciations (<i>recap</i>) <u>Air Pressure and Wind</u> <u>Weather patterns and severe storms</u> | 6-18 6-19 | |
| 11/26 11/28 | <u>Climate</u> <u>Origin of Modern Astronomy</u> <u>Touring Our Solar System</u> | 6-20 7-21 7-22 | |
| 12/3 12/5 | <u>Light, Astronomical Observations, and the Sun</u> <u>Beyond Our Solar System</u> | 7-23 7-24 | |
| 12/10 12/12 | Final Monday 11:30 am – 1:30pm (11:30am class) Final Wednesday 9:15 am – 11:15 (10:00am class) | | |

In addition to the chapter readings, concept questions and the Internet links on my home page, there is a series of films: *Earth Revealed*. This is a series of 26, half hour, films available in the library, or you may stream the videos from a computer with a high-speed connection. Go to <http://www.learner.org/resources/series78.html>. Click on the VoD icon and follow the directions to set up your free account. (Streaming image is rather small)

GRADING: 400 points total

Homework class participation and attendance is 25% of grade (breakout below)..... 100 pts

Weekly chapter quizzes are 50% of grade.

Highest 10 scores will be counted @ 20 pts each200 pts

No make-ups

Final Exam..... 100 pts

Homework and in-class participation (100 points, 25% of the grade.)

Assignments:

| | |
|--------------------------------------|--------|
| Geographic locations Lat Lon | 15 pts |
| Surface currents | 15 pts |
| Gateways to Glaciations | 20 pts |
| Paper #1(two options see below)..... | 20 pts |
| Paper #2 (to be announced) | 10 pts |
| Attendance/ in class activities..... | 20 pts |

(Paper#1 require Cover page and References - not counted toward page total)

Opt. 1) Students working on teacher credentials: Find 3 lesson plans, that interest you, covering 3 different concepts in the field of Earth Science (peer reviewed). Write a 2 to 3 page reflection paper reviewing these lesson plans, state how you would modify them to suit your teaching style, grade level, and how you would make them into inquiry based activities. Explain what you did and did not like, what you would change, and why you chose these lesson plans. List both CA standards and National standards for the grade levels you plan on teaching. Remember to do your best, as this is the project that you will most likely use in your profession. Include the original lesson plans.

Opt. 2) For those students who are not going on to teaching: Write a 2 to 3-page reflection paper, 12pt double spaced with 1” margins, **APA style**, covering a topic of your choice that pertains to Earth Science: What about this topic interests you the most. Topic must be approved by instructor.

Note: For the quizzes you will be allowed **ONE 8.5” x 10”** page with your *handwritten* notes, both sides. Photocopied notes and lift up flaps are **NOT** acceptable. If there is anything other than your hand written notes, I will take it. You may use all three of your note pages plus two more for the final. It is highly recommended that you take good notes and condense down. It is also highly recommended that you answer the chapter questions at the end of each chapter, as this is where I find most of the material for the exam questions.

Grades will be based on percentages:

| | | | |
|--------------|-----------|--------------|-----------|
| A 93% – 100% | 372 – 400 | C 73% – 76% | 292 – 307 |
| A- 90% – 92% | 360 – 371 | C- 70% – 72% | 280 – 291 |
| B+ 87% – 89% | 348 – 359 | D+ 67% – 69% | 268 – 279 |
| B 83% – 86% | 332 – 347 | D 63% – 66% | 252 – 267 |
| B- 80% – 82% | 320 – 331 | D- 60% – 62% | 240 – 251 |
| C+ 77% – 79% | 308 – 319 | F Below 59% | 239 |

Students with disabilities who require academic accommodations must be approved for services by providing appropriate and recent documentation to the Office of Disabled Student Services (DSS). This office is located in Craven Hall 5205, and can be contacted by phone at (760) 750-4905, or TTY (760) 750-4909. Students with disabilities should meet with me during my office hours or in a more private setting in order to ensure your confidentiality.

CLASS ATTENDANCE: To learn how to swim, you must get in the pool! Therefore, in order to learn Earth Science, you are expected to attend every class and to be on time. It is very disruptive to your classmates to show up late for class: So, DON'T steal their education! ***Cellular phones MUST be turned off or put on vibrate. NO phone conversations will be permitted in class at any time! If you must take a call, take it outside. Absolutely no texting during class!!! If this becomes a disruptive habit, I may ask you to leave the class. Absolutely NO calls will be permitted during exams, as this will be seen as cheating. Cheating on any exam is cause for an immediate failure with no makeups. No electronic devices may be in use during class. This includes but is not limited to I-pods, laptop computers, hand held games, etc... The only electronic device to be used in my classroom is a translation dictionary.***

Most exam material will be from class lecture, films, discussions, and end of chapter questions. A significant part of class time will include films and slides related to concepts you will be expected to understand. If you are absent, please contact a friend in the class to get notes. It is your responsibility to obtain missed material from another student. I will **NOT** respond to e-mail requests for content of classes missed, even if you are notifying me in advance. Ask your classmates!

In addition to the above material I will include survival techniques for study management that will help you in building the skills needed to thrive in a college setting. The key to success in my class is stay on top of the material, and asks lots of questions.

Classmates I Can Call:

| | |
|-------|-------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

Should your study buddies drop it is your responsibility to find new ones.

WORK EXPECTED: As in most any entry-level course, you will essentially be expected to learn a whole new vocabulary centered on the scientific description of the Earth and its processes. You should plan to spend at least 3 hours studying for each hour of in-class time (if science "isn't your subject", or your reading skills are weak, it will take more time and effort). In other words, **you will spend 3 hours per week attending class plus approximately 9 hours per week of "quality study time" devoted to preparing for this class each and every week!!** (Don't expect to "cram" at the last minute before an exam...trust me, it won't work!) You should not only have a basic understanding of the meaning of vocabulary words but also be able to draw a visual image of the word and how it fits into the overall scope of the topic--ask yourself what, where, when, why, and how.

GOOD LUCK, WORK HARD, and remember: I am here to facilitate your learning