

Syllabus for PHYS 201/201H Earth Science – Fall 2009

Class Times: Mon,Wed 905-955; Tues,Thurs 930-1045 – BHS 106

Instructor Information: Dr. Mike Larsen

Office Phone: 865-8280

Office Hours: Mon and Wed 10:10-11:00; tues 11:00-12:00 (or by appt)

Office Locations: Bruner Hall, Room 218 and/or Room 601 and/or Room 109 (Check Door of BHS218)

Email address: LarsenML@unk.edu (please use sparingly; I'd rather talk to you in person if you have a question or a concern.)

Course Webpage: http://rip.physics.unk.edu/Larsen/phys201_fall09.html

(Note that your professor uses a course webpage – **NOT BLACKBOARD** – to post announcements, supplementary information, and other materials.)

Course Description (from Undergraduate Catalog)

Inquiry activities are used to teach basic concepts of meteorology, geology, and astronomy. Emphasis is placed on process and critical thinking skills as well as on environmental issues.

Textbook

“Investigations in Earth Science”, M.L. Larsen (2009 Ed.)

Some handouts will supplement this text.

Final Exam Time Period

Wednesday, December 16th, 8-10 AM

You must notify your instructor during Dead Week if you plan to take the final exam. (See grading section for more details).

Attendance Policy

This class involves in-class inquiry activities and exercises as an integral part of the course. You can't participate in these activities if you are not here. Your grade, and your learning experience, will suffer if you do not attend the vast majority of the class sessions. If you are unable to attend, your grade will be affected. If you miss a class, you are responsible for mastering the missed information on your own. Contact some classmates to find out what was covered and obtain any notes. Contact the professor for help only after you have done this. Your instructor does not need to be told if you will not be attending class on a particular day; no distinction is made between "excused" and "unexcused" absences for any reason. Your instructor reserves the right to lower your course grade by up to a full letter if you miss 10% or more of the classes. (4 classes/week for 15 weeks is 60 classes; this means 6 absences or more may cause your grade to suffer).

Classroom Policies

Please treat your classmates and professor with the respect due to them as fellow adults and human beings. Your professor always reserves the right to dismiss you from the room if necessary.

Please do not text message, browse the internet, check email, or engage in other non-class-related communications during class. Note that this class is held in a physics lab. There have been nasty things on these tables. Bringing food or drink into the room – especially if you plan on ingesting it – is not a good idea if you want to remain healthy. General advice for life – don't lick anything in a science lab, or anything that has been in one.

Cell phones – Few things irritate your professor as much as having his lecture interrupted by a cell phone ring – *even on vibrate*. It totally makes him lose his train of thought. Every time a phone rings, your professor is pretty much useless for the next 3 minutes. Multiply that by about 30 students in class, this means every time your cell phone rings you are depriving your fellow students of 90 minutes of expensive education. That is rude and disrespectful to everyone. Turn your cell phones *off* before coming to class. Your professor reserves the right to remove you from class (even during a test, which you will not be able to make up) if he hears a cell phone.

Grading *For those of you taking PHYS 201*, your grade is based as follows:

- 25% Test 1 (Astronomy)
- 25% Test 2 (Meteorology)
- 25% Test 3 (Geology and Oceanography)
- 15% Inquiry Activities/Homework/Quizzes
- 10% Attendance and Participation

There is also an *optional comprehensive final exam* that *can not hurt your grade*. If you opt to take the optional final, your lowest unit test score will be replaced with your score on the final exam. If your final exam score is lower than all of your unit test scores, your grade will remain unchanged. Because your optional final may erase your lowest score on a unit test (including a 0 for a missed test), **NO MAKE UP EXAMS WILL BE GIVEN FOR ANY TEST, FOR ANY REASON**. You always have the fall-back of taking the optional final if for some reason you must miss some other exam. If you have an unavoidable conflict that you know about in advance, your instructor *may* let you take the exam early – at his discretion. Late inquiry activities will be penalized 25% for every day late.

For those of you taking PHYS 201H, you have a choice – but you must make it soon. You can either (1) have the same grading structure with an additional pass/fail project on the side, or (2) not do any extra work. However, if you opt for choice (2) the final is **NOT OPTIONAL FOR YOU**. Your grade will be based as follows (if you choose option 2):

- 20% Test 1 (Astronomy)
- 20% Test 2 (Meteorology)
- 20% Test 3 (Geology and Oceanography)
- 15% Comprehensive Final Exam (NOT optional)
- 15% Inquiry Activities/Homework/Quizzes
- 10% Attendance and Participation

All grading policies are the same for students in PHYS 201H, including no make-up exams.

Course Philosophy

Science is built up of facts, as a house is with stones. But a collection of facts is no more a science than a heap of stones is a house. – Henri Poincare

Science is, at root, the process of using observation and human faculties to learn things about the world. It is not merely a field where you memorize a bunch of things that other people have learned about the world. In taking a science class, you could either learn about what scientists have done in the past or learn how science *is* done. Your high school teachers (many of whom never took a science class much more involved than this one) may or may not have realized this, and most emphasized on informing you about what scientists have done in the past.

In this class, you will learn a bit more about *doing* science. For your future life it is probably less important for you to know who discovered what famous result than to gain the skills required to understand, evaluate, and apply scientific breakthroughs discovered in your lifetime. This requires you to learn scientific reasoning, principles, and techniques.

Your grades will be dependent on your ability to apply these skills – as well as learn a few facts about the world along the way. We don't teach this class in the history department for a reason; you will be expected to think and reason about new ideas that you are seeing for the first time on a test. Learning a laundry list of facts alone will not get you through this course with a good grade.

Topics:

This course is naturally divided into 3 units – Astronomy, Meteorology, and Geology. Each of these units alone are subjects studied by professional scientists for their whole lives; we're obviously not going to cover it all.

Because this is a survey course where many different topics are going to be discussed, we will limit our scope to the aspects of these three units that are *relevant to processes on the Earth*. This means that even though constellations, for example, are a part of the history of Astronomy they really don't influence anything on Earth and *will not be discussed in this class*. If you are interested in non-Earth related aspects of these disciplines, I strongly

suggest you take GEOG 207 (Geology), PHYS 209 (Meteorology), or PHYS 210 (Astronomy) to obtain an introduction to the fields as a whole, not just how they relate to processes on Earth. The topics we are not discussing are interesting and worth study; but we already are trying to fit a lot of material into a relatively short amount of time and we just won't be able to do everything justice unless we're a little selective in the materials we address.

UNK ADA Statement – Students with Disabilities

The university is committed to providing support for students with disabilities. If you are a student with physical, learning, emotional, or psychological disabilities you are encouraged to stop by room 163 in the Memorial Student Affairs Building, the Academic Success Office and make an appointment with David Brandt, the Disabilities Coordinator at 308-865-8214 or by email at brandtdl@unk.edu.

If you have an accommodation plan please see me as soon as possible, so we can make any arrangements necessary for your learning. No accommodations can be provided until a Reasonable Accommodation Plan is in place. Please remember, plans are not retroactive and cannot be used for assignments prior to the date of my signature.

To the greatest extent possible, University Representatives, shall observe confidentiality with respect to any request for accommodation.

General Studies Information

Purpose of General Studies

The UNK General Studies program helps students acquire knowledge and abilities to understand the world; to make connections across disciplines; and to solve contemporary problems.

Course Learning Outcomes GS Category learning outcomes – Students will be able to:

- 1) demonstrate the ability to apply the logical structure of scientific methodology in the laboratory setting
- 2) demonstrate the ability to comprehend how scientific concepts originate, are validated and refined
- 3) demonstrate the ability to use the specialized vocabulary needed to understand matter and energy

Required Sources/Readings

- 1) Your textbook (see above)
- 2) Other supplied materials written by your instructor