

SYLLABUS

Instructor: John Winter **Office:** Rm. 150 Science **Office Hours:** 2:30-4 M, 11 Tu and 10 Th
Web page: <http://www.whitman.edu/geology/winter/> (but I'm in often)

Texts: *Earth, An Introduction to Physical Geology* by Tarbuck and Lutgens 8th edition

We produce our own **Laboratory Manual**, available at the bookstore

Grading:	Exam 1	20%
	Exam 2	20%
	Final (not cumulative)	25%
	Lab/Homework	<u>35%</u>
		100%

Physical Geology is an introductory, or survey, course designed to give you a general overview of the science of geology. It is intended to give non-majors an understanding of the dynamic processes that act both at the Earth's surface and within it to create the planet on which we live. A knowledge of geology may help you understand natural hazards in your home area and choose a future home wisely. It may also give you a better grasp of environmental and pollution concerns as well as future resource availability. Travel is also more interesting when you can speculate on the geology you see around you. At the same time the course provides a general basis and framework for those who decide to continue their studies in geology. We will learn to develop some of the basic tools and approaches that geologists use to study the Earth, and I hope that we will also develop an appreciation for the delicate balance that exists between humans and the planet that supports their lives. Lectures will amplify a number of the ideas presented in the text, and emphasize regional examples. However, they are not meant to simply review the text, so I plan to use the lecture hour to develop in more detail those concepts that I think require more explanation, or are more likely to affect those of us who live in the West.

I teach this course as a *process-oriented* course. In other words, we we will concentrate on what processes have occurred (or are occurring) to create features that we now observe. These processes are often of a large scale, or of a very slow rate, and thus rather difficult to assess at first glance. Geologists develop a grander sense of scale and time than do most other people. Sometimes we can observe Earth processes directly. At other times we can only see the resulting products, and must learn how to infer the process responsible. By so doing, I hope to share with you the dynamic nature of science, and try to relate how scientists look at the world, and how they investigate a problem.

I highly recommend that you **read the assigned chapters prior to the classes** that address that subject. That way you will understand the material much better in the lecture, and also be able to focus on any problems you might have with the text material in time to ask questions for clarification while we are discussing that particular topic. Sometimes we will be discussing the material or doing problems in class, so your preparation will be all the more critical. Due to a shortage of classroom time, some topics (chapters) in the text will not be covered in class. They *will* still be covered in the subsequent exam, however, so please read *all* assigned chapters and ask any questions that you may have during an exam review session. There are also some lab preparatory readings from the text and lab manual. Most labs have a pre-lab write-up to be completed and handed in at the *beginning* of each lab.

Please note that the final exam is on Friday, December 15th at 9 am. Please schedule your departure from Whitman for the holidays so that it does not occur before this time. According to Whitman code, an earlier departure flight or ride from Walla Walla is not a sufficient reason to excuse you from taking the final at the appointed time. Please plan accordingly.

Class Schedule

<u>Week</u>	<u>Lecture</u>	<u>Laboratory</u>	<u>Reading</u>
Aug. 29	Introduction	Minerals	Ch. 1, 3* Ch 2 as desired
Sept. 4	Igneous Rocks and Processes	Igneous Rocks	Ch. 5, 4*
11		Field Trip or Sed. Rocks	Ch. 4, 7*
<i>Sept. 14 Regional Geology field trip. Geology Department gone. No class Thursday.</i>			
18	Weathering, Soils	Field Trip or Sed. Rocks	Ch. 6, 7*
***** Exam #1 ***** Thursday Sept. 21 ***** (pre-exam review Wed, Sept. 20, 5:30 – 6:30 pm)			
25	Mass Wasting	Field Trip or Streams	Ch. 15
Oct. 2	Streams, Groundwater	Field Trip or Streams	Ch.16, 17
<i>Mid-Semester Break October 7-10.</i>			
12	Time & Sed. Processes and Glaciation	Metamorphic Rocks	Ch.9, 8*
16		Topographic Maps	Ch. 18
***** Exam #2 ***** Thursday Oct. 19 ***** (pre-exam review Wed, Oct. 18, 5:30 – 6:30 pm)			
23	Earthquakes	No Lab	Ch. 11
30	Seismicity, Gravity	Structures	Ch. 12
<i>Rock and Mineral Quiz</i>			
Nov. 6	Mountains	Topographic Maps 2	Ch. 14
13	Continental Drift & Plate Tectonics	Plate Tectonics	Ch. 2, 13
<i>Thanksgiving Break November 18-26.</i>			
27	Resources	Geologic Maps	Ch. 21
Dec. 6	"		
***** Final Exam ***** Friday Dec. 15 th 9-11 am *****			

* **Read prior to week's laboratory**