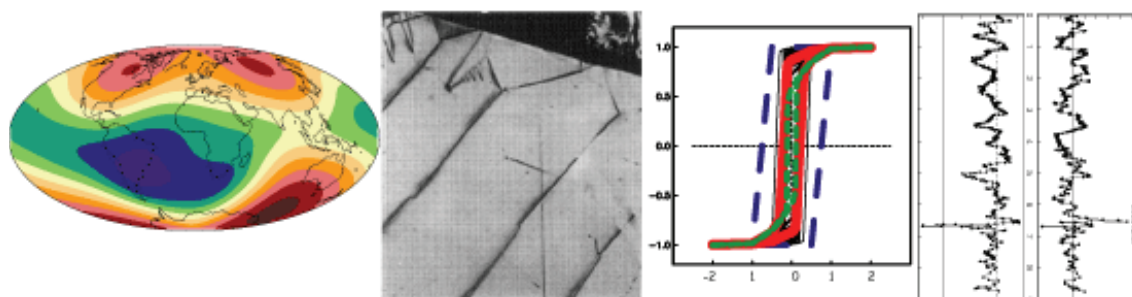


## Rock and paleomagnetism



### Instructor:

Lisa Tauxe, 300E Ritter Hall, 858-534-6084

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### How to take this class:

Attend each lecture listed below either live in class or online, or listen to the recording online. Lectures will be 10:30-11:50 am PST in 229 Ritter Hall.

Do the required reading in the textbook, *Essentials of Paleomagnetism*. Don't just skim the reading for clues to answer the homework - read the entire assigned part with concentration.

Work the assigned problems and e-mail a zip file with the ipython notebook and all necessary datafiles in it to ltauxe@ucsd.edu. Problems are due the week after they are assigned - but don't procrastinate! The purpose of these assignments is to allow you to work through the lecture and reading material in an active way. You may consult with your fellow students, but the work you turn in must be your own. Don't just copy or modify answers from others, including handouts from previous classes - that is not what this class is about and will be considered cheating. Students suspected of cheating will be reported to the Academic Integrity Office.

In addition to the homework assignments (30%), there will be a midterm (30%), a final project (30%), and one mandatory but totally fun field trip (date TBD), (10%).

The most up-to-date information for this class will be at:

<http://magician.ucsd.edu/~ltauxe/sio247>.

Schedule - dates subject to change

Date	Topic	Reading/Assignment	Lecture Notes
Mar. 29	Class overview	PmagPy Cookbook, Chaps. 1 & 4 Install software, find command line	Lecture01.pdf
Mar. 31	Python Crash Course	PmagPy Cookbook Chaps 7 & 8 Write your first IPython notebook	Lecture02.pdf
Apr. 5	Physics of Magnetism	Essentials Chap. 1 Problems 1.1, 1.2 & 1.4	Lecture03.pdf
Apr. 7	The Geomagnetic Field	Essentials Chap. 2 Problems 2.1 & 2.2	Lecture04.pdf
Apr. 12	Magnetism at the Atomic Level	Essentials Chap. 3 Problems 2.3 & 3.1	Lecture05.pdf
Apr. 14	Magnetic energy, domains, & hysteresis	Essentials Chaps. 4 & 5 Problems 4.2 & 5.2	Lecture06.pdf
Apr. 19	Magnetic Mineralogy	Essentials Chap. 6 Problems 6.1 & 6.2	Lecture07.pdf
Apr. 21	Natural Remanences	Essentials Chap. 7 Problems 7.1 & 7.2	Lecture08.pdf
Apr. 23	Special Saturday Field Trip	Meet in Sverdrup Lot at 8am	
Apr. 26	Applied Rock Magnetism	Essentials Chap. 8 Problems 8.1 & 8.3	Lecture09.pdf
Apr. 28	Getting a magnetic vector	Essentials Chap. 9 Problems 7.4, 9.1 & 9.6	Lecture10.pdf
May 3	Paleomagnetic data analysis Fisher statistics	Essentials Chap. 11 Problem 11.1	Lecture11.pdf
May 5	Monte Carlo simulation and bootstrapping in paleomagnetism	Essentials Chap. 12 Problem 12.3	Lecture12.pdf
May 10	Anisotropy in paleomagnetism	Essentials Chap. 13 Problem 13.3 & 2pg project proposal	Lecture13.pdf
May 12	Paleointensity	Essentials Chap. 10 Problem 10.1	Lecture14.pdf
May 17	The ancient geomagnetic field Paleosecular variation, Reversals and Excursions	Essentials Chap. 14 Problems 15.1 & 15.2	Lecture15.pdf
May 19	The Geomagnetic polarity time scale Magnetostratigraphy	Essentials Chap. 15 Problem 16.5	Lecture16.pdf
May 24	Poles and apparent polar wander Plate tectonic reconstructions	Essentials Chap. 16 Problem 16.5	Lecture17.pdf
May 26	Student presentations		
May 31	15 min. ppt on final project		
June 3	Final		