	Tuesday	**Thursday**
Jan	19 – Roy -Introduction and background	
Jan		26 – Roy -Math review – continuum mechanics
Feb		2 Mueller – *Appendix 2:* Stress, Strain, Elasticity, Waves;
Feb		9 Han – *Ch 4*: Seismic waves - tomography
Feb		16 Wilgus – *Ch 4*: Seismic waves – earthquake seismology
Feb		23 Finlay – *Ch 4*: EQs/Refraction
Mar		2 Ohnemus – *Ch 4:* Reflection seismology
Mar		9 Milazzo – *Ch 5*: Gravity reductions and anomalies from simple structures
Mar		16 – Spring Break
Mar		23 Lewis – *Ch 5*: Isostasy and flexure
Mar		30 – Roy *Ch 7*: Heat conduction/simple geotherns
Apr		6 – Paterniti – confirm! *Ch 9*: Cooling of oceanic lithosphere
Apr		13 – Green *Ch 8:* Mantle convection
Apr		20 – Rugland *Ch 9*: Thermal structure of subduction zones
Apr		27 –*TBD*
May		4 – *TBD*

Expectations will differ for undergraduate students and graduate students.
Grades will be based on:

1) class presentation/lecture/discussion – 45%;
2) final project – 55% – a calculation involving Matlab, to be based on your presentation and to be finalized after you and I have met individually

<u>YOUR ACTION ITEMS: - both require you to meet/communicate with me:</u>

Instructor: Mousumi Roy PandA 1146 277-4521; mroy@unm.edu
Office Hours: Tue 3-4 (by appt.); Th 9-10:30

For (1) above: Take a look at the schedule above – the timings are rough, but the topics are more or less arranged in order. CHOOSE a topic starting in Feb onward that you would like to present in class. You will work out a presentation *with input from me* – I can provide you with reading materials and notes. Your presentation should involve a set of slides and also blackboard work; you will also put together a handout for your classmates on the topic you are presenting. You may team up with a classmate to jointly present a topic – **communicate with me about this** – as long as all topics are covered, I am OK with this. I have left two blank slots in case you come up with an idea that is not included in the list above.

For (2) above: When you see me for your presentation, at that time, you and I will work out what might be a good calculation (Matlab-based) for you to turn-in as your Final Project. In this project, you will define a scientific problem and then solve it using a computation. The topic may be something related to your presentation or it may be different – **you and I will need to coordinate on this**. When you turn in your project, you will turn in a write-up (words) with figures and also turn in your Matlab code(s). I will grade it based on how thorough your work is. *For grad students: you will be required to connect your calculation to current literature and discuss papers that are relevant to your problem.*

Textbook (required): The Solid Earth, by C.M.R. Fowler (Cambridge), 2005.
Reference Texts and Additional Reading:

1. *Principles of Geophysics,* by N. Sleep and K. Fujita
2. *Physics of the Earth,* by F. Stacey
3. *Plate Tectonics: the way it works,* by Cox and Hart
4. *Geodynamics*, by Turcotte and Schubert
5. *Theory of the Earth*, Anderson
6. *Mechanics of Earthquakes and Faulting,* Scholz
7. *The Earth,* Jeffreys

All of these books except #1 are in the library, and I have copies of 1-6 that are available for loans for short periods.

Instructor: Mousumi Roy PandA 1146 277-4521; mroy@unm.edu
Office Hours: Tue 3-4 (by appt.); Th 9-10:30