

Geo 354/384D Lecture Schedule as Best I can Predict

Jan 18 – Introduction

Jan 20 – Formation of Earth, Composition

Jan 23 – Review Plate Tectonics

Jan 25 – Euler Poles, Plates on a Sphere

Jan 27 – Plate Evolution, Triple Junctions

Jan 30 - Examples

Feb 1 – Magnetism, Earth's Magnetic Field

Feb 3 – Remnant Magnetism

Feb 6 – Paleomagnetism

Feb 8 – Ocean magnetic lineations, Plate Reconstructions

Feb 10 – How to Write a Paper

Feb 13 – Stress - Strain

Feb 15 – Elasticity

Feb 17 – Wave Equation – P, S, Surface Waves

Feb 20 – Basic Earth Structure, Seismic Phases

Feb 22 – Refraction Method

Feb 24 – Crustal Structure

Feb 27 – Dislocation Model for Earthquakes

Feb 29 – Earthquake Mechanisms

Mar 2 – Earthquake Magnitudes and Locations

Mar 5 – Global Seismicity

Mar 7 – Catch up - Review

Mar 9 – Midterm

Mar 19 – Gravity (First Paper Due)

Mar 21 – Potential Energy – Geoid

Mar 23 – Reference Gravity Field – Bouguer, Free Air Anomalies

Mar 26 – Bouguer, Free Air Anomalies

Mar 28 – Geoid-Gravity Anomalies

Apr 2 - Isostasy

Apr 4 – Flexure – Post Glacial Rebound – Solid State Viscosity

Apr 6 – Heat in the Earth

Apr 9 – Conductive Heat Flow

Apr 11 – Heat Flow and Cooling in Oceans

Apr 13 – Geotherm and Adiabats

Apr 16 – Convection – Rayleigh Number

Apr 18 – Deep Earth Structure (Mantle)

Apr 20 – Deep Earth Composition, Phase Changes

Apr 23 – Core Structure, Composition

Apr 25 – Seismic Tomography

Apr 27 – 3D Earth Models

Apr 30 – Continents

May 2 – Thermo-chemical Convection

May 4 – Review – Catch-up (Second Paper Due)

GLOBAL GEOPHYSICS GEO354-GEO 384D

- Taught By:** Steve Grand (Room 4.220B) , Nathan Bangs (Room xxxx)
- Location:** Geo 3.116 MWF 9:00-10:00
- Office Hours:** Monday through Friday 10-11 (Grand)
Bangs?
- Prerequisites:** Differential and Integral Calculus, Introductory Physics
- Grading:** 35% Final Exam
25% Midterm March 9
15% Paper #1 Due March 19
15% Paper #2 Due May 4
10% Homework
- Textbook:** Fowler, The Solid Earth: An Introduction to Global Geophysics
- References:** Brown and Mussett, The Inaccessible Earth
Lowrie, Fundamentals of Geophysics
Turcotte and Schubert, Geodynamics
Stacey, Physics of the Earth
Gubbins, Seismology and Plate Tectonics
Cox and Hart, Plate Tectonics, How it Works
Cox, Plate Tectonics and Geomagnetic Reversals
Lay and Wallace, Modern Global Seismology