9-2013

GEO 315.01: Structural Geology

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GEO 315. Structural Geology. Autumn 2013.
University of Montana
Jim Sears, CHCB 362
Office Hours M, T 10-11 am, F 11

This course examines structures of deformed rocks; mechanical principles; graphical interpretation of structural problems, and tectonic principles. The course has no assigned textbook, but students are expected to find and read auxiliary material on the internet or in the library.

Approximate schedule:

Aug	26	Introduction
	28	Fractures
	30	Dike swarms
Sep	2	Labor Day Holiday
	4	Mohr circle
	6	Mohr circle ex. *Due 9-13-13*
	9	Faults - kinds, settings
	11	Thrust and fold systems
	13	Fabrics - bedding, cleavage, lineations
	14	Day-long field trip to gather fabric data
	16	Compile fabric data
	18	Plot fabric data
	20	Plot fabric data using Allmendinger's program. *Due 9-27-13*
	23	Cross-sections of fold-thrust systems - kink-fold method
	25	Cross-sections of fold-thrust systems - ramps and flats
	27	Drummond x-section. *Due 10-4-13*
	30	Stress
Oct	2	Mohr circle for thrusts
	4	Mohr circle exercise. *Due 10-11-13*
	7	Rock strength, effect of water
	9	Fault duplexes
	11	Sun River triangle zone x-section. *Due 10-18-13*
	14	Basin inversion - Lewis thrust
	16	Mega thrust ramps, isostatic subsidence, strength
	18	Restore Sun River x-section. *Due 10-25-13*

	21	Rocky Mountain thrust and fold belt
	23	Fluids in thrust systems
	24	Thrust rotation
	28	GSA
	30	GSA
Nov	1	Normal faults
	4	Listric faults
	6	Earthquakes
	8	X-sect of Tendoy Fault. *Due 11-15-13*
	11	Veterans' Day Holiday
	13	Continental rifting
	15	Core complexes cross-section. *Due 11-22-13*
	18	Strain, strain rate
	20	Measuring strain
	22	Strain exercise. *Due 12-6-13*
	25	Metamorphic fabrics
	27	Thanksgiving travel day
	29	Thanksgiving holiday
Dec	2	Strike-slip faults
	4	Flower structures
	6	Lewis and Clark line
	12	FINAL EXAM 8-10 am. Comprehensive.

Evaluation:

Exercises	90 points
Field trip	20 points
Final exam	40 points