Geol 596 Rock Fractures
Fall 2012

Instructor: Professor Shuo Ma
GMCS 233A
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Course Meetings:
Lecture: Monday, 3:00 – 5:40, CSL 427

Office Hours: Wednesday 11:00 am – noon or by appointment


Learning Objectives:
- Be familiar with various fascinating geological processes involving rock fractures
- Develop a good understanding of physical principles underlying rock fractures
- Develop skills to formulate and test physical models to explain field observations

Tentative schedule:

Week 1 (August 27): First meeting
Week 2 (September 3): Labor Day
Week 3 (September 10): SCEC meeting
Week 4 (September 17): Stress (Chapter 2)
Week 5 (September 24): Strain (Chapter 3)
Week 6 (October 1): Stress-strain relationship (Chapters 4, 5, and 6)
Week 8 (October 8): Failure criteria and fracture mechanics (Chapters 7 and 10)
Week 9 (October 15): Extension and shear fractures (Chapters 8 and 9)
Week 10 (October 22): Field analysis (Chapters 11 and 12)
Week 11 (October 29): Evolution of extension fractures and faults (Chapters 13 and 14)
Week 12 (November 5): Fluid flow (Chapter 15)
Week 13 (November 12): Veteran’s Day
Week 14 (November 19): Student presentations
Week 15 (November 26): Student presentations
Week 16 (December 3): AGU meeting
Week 17 (December 10): Paper due

Grading: Homework (40%)
Project and term paper (60%)