GEOL 598B
Carbonate Reservoirs – Exploration to Production
Fall 2009
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Wednesdays: 1-3:50PM

Week 1: Introduction to Carbonate Sediments - Sarg

Week 2: Carbonate Facies & Platform Architecture – Sarg

Week 3: Seismic Expression of Carbonate Platforms - Sarg

Week 4: Diagenesis I – Humphrey
1. carbonate chemistry, solutions, and equilibria
2. diagenetic processes & porosity evolution

Week 5: Diagenesis II – Humphrey
1. diagenetic environments, processes, and products
2. dolomitization

Week 6: Formation Evaluation – Batzle & Prasad

Week 7: Formation Evaluation

Week 8: Formation Evaluation

Week 9: Formation Evaluation

Week 10: Production Engineering: Introduction - **Kazemi**
1. Flow in *fractures* as compared to flow in porous *matrix*
2. Flow in *dual-porosity* and *multi-continuum* porous media
3. What makes single-phase flow different from multiphase flow

Week 11: Production Engineering: Multi-scale physics - **Kazemi**
1. *Multi-scale physics* of flow and computation in naturally fractured porous rocks
2. The role of *geomechnics* on fracture flow: *poroelasticity* and *thermoelasticity*

Week 12: Production Engineering: Reservoir performance – **Kazemi**

1. *Dry gas* vs. *gas-condensate* reservoir performance
2. *Primary, secondary and tertiary oil recovery* performance

Week 13: Class Project

Week 14: Class Project

Week 15: Class Project

Week 16: Class Project