ENERGY EXPLORATION (GEO 330K)  
SPRING 2011

Lecture: MW 1:00 - 2:00 pm  JGB 2.216  
Labs: JGB 2.310  T 8-10am, TH 8-10am, F 8-10am, T 10-12pm, TH 12-2pm, M/W 1-2pm and M 2-4pm

Instructor: Peter B. Flemings, EPS 3.134  
Tel: 5-8738, [pflemings@jsg.utexas.edu]  
Xavier Janson, PRC building 130 BEG 3.112F  
Tel: 5 9524, Xavier Janson [Xavier.Janson@beg.utexas.edu]  
Ron Steel, DGS 6.114  
Office Phone: 1- 0954 [rsteel@mail.utexas.edu]

Teaching Assistants:  
XXX Rene Winter  rene.winter@mail.utexas.edu  
YYY Migdalys Salazar  migdasalazar@mail.utexas.edu  
ZZZ Robert Brown  brownr61@gmail.com

Office Hours:  
Flemings: MW 12-1 (or by appointment)  
Janson: MW 12-1 (or by appointment)  
Steel: MW 12-1 (or by appointment)

Grading Policy  
Homework/Quizzes 10%  
Labs  25%  
Mid-Term  20%  
Final Exam  20%  
Final Project  25%

Class Attendance is required and there will be quizzes during class.

Labs are due no later than the start of the next lab. No late labs accepted (0 credit) except under pre-negotiated circumstances.

Note: All acts of dishonesty in any work constitute academic misconduct. This includes, but is not limited to, cheating, plagiarism, fabrication of information, misrepresentations, and abetting of any of the above. The Academic Misconduct Disciplinary Policy will be followed in the event that academic misconduct occurs.

I-CLICKER: An i-clicker remote is required. You can purchase it through the bookstore.

References:  
Other background reading  
**Class Schedule**

**Week 1**
- **Lect. 1** Wed, Jan 19: Course Overview & Fundamentals of Seismic Interpretation (PF)
- **Lab 1** Contouring exercises (RS)

**Week 2**
- **Lect. 2** Mon, Jan 24: Seismic Interpretation (incl. shelf margins) (XJ)
- **Lect. 3** Wed, Jan 26: Fundamentals of Well Log Analysis (PF)
- **Lab 2** Seismic & log calibration; reservoir recognition on logs and seismic (RS and XJ)

**Week 3**
- **Lect. 4** Mon, Jan 31: Clastic Reservoirs & their log patterns (RS)
- **Lect. 5** Wed, Feb 02: Clastic Reservoirs: change across shelf margins (RS)
- **Lab 3** Seismic Mapping: Faults (XJ & PF)

**Week 4**
- **Lect. 6** Mon, Feb 07: Seismic interpretation-structure and traps (XJ)
- **Lect. 7** Wed, Feb 09: Seismic interpretation-reservoir and bright spots (XJ)
- **Lab 4** Seismic Mapping: horizons (XJ & PF)

**Week 5**
- **Lect. 8** Mon, Feb 14: Mapping fluid distribution (PF)
- **Lect. 9** Wed, Feb 16: Volume calculation (PF)
- **Lab 5** Prospect Generation (PF)

**Week 6**
- **Lect. 11** Mon, Feb 21: Review of seismic work so far (PF)
- **Lect. 12** Wed, Feb 23: Basins: Rift to Passive Margin (RS)
- **Lab 6** Trap Lab (XJ)

**Week 7**
- **Lect. 13** Mon, Feb 28: Subsurface temperature, pressure & petroleum systems (RS)
- **Lect. 14** Wed, Mar 02: Exam Review (RS)
- **Lab 7** GeoHistorylab&MaturationModeling(RS)

**Week 8**
- **Lect. 15** Mon, Mar 07: Source rocks, kerogen & HC generation & migration (XJ)
  **Wed, Mar 09** 6-8pm Mid-Term Exam (evening grading by TAs & Profs)
- **Lab 8** Exploration Project handout

**Spring Break – March 14-18**
### Week 9
- Lect. 17 Mon, Mar 21: Estimating in-situ Reserves (PF)
- Lect. 18 Wed, Mar 23: Guest Scott Tinker: ‘Energy Demand’
- Lab 9: Exploration Project

### Week 10
- Lect. 19 Mon, Mar 28: Risk Analysis (Chevron)
- Lect. 20 Wed, Mar 30: Guest Bill Galloway: ‘GOM Margin & HC Reserves’
- Lab 10: Risk Analysis Lab (PF)

### Week 11
- Lect. 21 Mon, Apr 04: Guest Peter Flemings: Macondo Well (BP)
- Lect. 22 Wed, Apr 06: Exploration Project
- Lab 11: Exploration Project work

### Week 12 (AAPG week)
- Lect. 23 Mon, Apr 11: Guest lecture on Shale Gas
- Lect. 24 Wed, Apr 13: Exploration Project
- Lab 12: Exploration Project work

### Week 13
- Lect. 25 Mon, Apr 18: Exploration Project assistance
- Lect. 26 Wed, Apr 20: Introduction to project presentation (tips for good talk)
- Lab 13: Exploration Project

### Week 14
- Lect. 40 Mon, Apr 25: Class Evaluation & Project assistance
- Tue, Apr 26: Poster Presentation all day
- Wed, Apr 27: Chevron Presentation

### Week 15
- Lect. 41 Mon, May 02: Profs available for exam help
- Mon, May 16: 9.00-12.00: Final Exam