

ENERGY EXPLORATION (GEO 330K)

SPRING 2012

Lecture: MW 1:00 -2:00 pm JGB 2.218
Labs: JGB 2.310 T 8-10am, TH 8-10am, F 8-10am, T 10-12pm, TH 12-2pm, M 2-4pm

Instructor: **Peter B. Flemings**, EPS 3.134
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Teaching Assistants:

	Email	Section 1	Section 2
William Betts	wbetts@mail.utexas.edu	27600, T 10-12	27610, M 2-4
Laura Pommer	laura.pommer@utexas.edu	27585, T 8-10	27605, TH 12-2
Jennifer Glidewell	glidewell@mail.utexas.edu	27590, TH 8-10	27595, F 8-10

Office Hours:

Flemings: MW 12-1 (or by appointment)
Janson: MW 12-1 (or by appointment)
Steel: MW 12-1 (or by appointment)
William Betts
Laura Pommer
Jennifer Glidewell

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:

- 1) Gluyas, J. and Swarbrick, R., 2004, Petroleum Geoscience, Blackwell Publishing Company, 359 p.
Recommended class text

Other background reading

- 2) Selley, Richard C., 1998, Elements of Petroleum Geology 2nd ed., Academic Press, 470 p.
- 3) A squith, G., 1982, Basic Well Log Analysis for Geologists, Methods in Exploration Series, AAPG, 216 p.
- 4) Yergin, D., The Prize, Simon and Schuster, 885 p.
- 5) Levorsen, A.I., 1967, Geology of Petroleum, W. H. Freeman and Company, 724 p.

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Class Schedule

Week 1

Lect. 1	Wed, Jan 18	Course Overview & Fundamentals of Seismic Interpretation (PF)
Lab 1	Contouring exercises (RS)	

Week 2

Lect. 2	Mon, Jan 23	Seismic Interpretation (incl. shelf margins) (XJ)
Lect. 3	Wed, Jan 25	Clastic Reservoirs & their log patterns (RS)
Lab 2	Seismic & log calibration; reservoir recognition on logs and seismic (RS and XJ)	

Week 3

Lect. 4	Mon, Jan 30	Structural Traps (XJ)
Lect. 5	Wed, Feb 01	Clastic Reservoirs: across shelf margins (RS)
Lab 3	Seismic Mapping: Faults (XJ & PF)	

Week 4

Lect. 6	Mon, Feb 06	Seismic interpretation-structure and traps (XJ)
Lect. 7	Wed, Feb 08	Seismic interpretation-reservoir and bright spots (XJ)
Lab 4	Seismic Mapping: horizons (XJ & PF)	

Week 5

Lect. 8	Mon, Feb 13	Mapping fluid distribution (PF)
Lect. 9	Wed, Feb 15	Volume calculation (PF)
Lab 5	Prospect Generation (PF)	

Week 6

Lect. 10	Mon, Feb 20	Source rocks, kerogen & HC generation (XJ)
Lect. 11	Wed, Feb 22	Maturation and migration (PF)
Lab 6	Trap Lab (XJ)	

Week 7

Lect. 12	Mon, Feb 27	Sedimentary Basins (RS)
Lect. 13	Wed, Feb 29	Basins: Rift to passive margin (RS)
Lab 7	Geo History Lab & Maturation Modeling(RS)	

Week 8

Lect. 14	Mon, Mar 05	Exam Review (RS)
	Wed, Mar 07	6-8pm Mid-Term Exam (evening grading by TAs & Profs)
Lab 8	Exploration Project handout	

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Week 9

Spring Break – March 12 - 16

Week 10

Lect. 15	Mon, Mar 19	Description of Final Project (XJ)
Lect. 16	Wed, Mar 21	Interpretation of Paleontologic Data (RS)
Lab 9	Exploration Project	

Week 11

Lect. 17	Mon, Mar 26	Galloway Lecture
Lect. 18	Wed, Mar 28	Risk Analysis (PF)
Lab 10	Risk Analysis Lab (PF)	

Week 12

Lect. 19	Mon, Apr 02	Risk Analysis (Chevron)
Lect. 20	Wed, Apr 04	OPEN
Lab 11	Exploration Project work	

Week 13

Lect. 21	Mon, Apr 09	Regional Basemap Review
Lect. 22	Wed, Apr 11	Guest Lecture (Shell Gas)
Lab 12	Exploration Project work	

Week 14

Lect. 23	Mon, Apr 16	Exploration Project assistance
Lect. 24	Wed, Apr 18	Introduction to project presentation (tips for good talk)
Lab 13	Exploration Project	

Week 15 (AAPG week)

Lect. 25	Mon, Apr 23	Project assistance
	Wed Apr 25	Project assistance

Week 16

Lect. 26	Mon, Apr 30	Project Assistance
	Tuesday May 01	Poster presentation all day
Lect. 27	Wed, May 02	Chevron Presentation
	Friday, May 11	9.00-12.00: Final Exam