

GEOLOGY – 600
ADVANCED PETROLEUM EXPLORATION
IMPERIAL BARREL AWARD COMPETITION
Spring 2013
Professor Kim Olsen
Eugene R. (Kip) Hering (Advisor)
Bennett Spevack (Advisor)
Text: AAPG – IBA Data Set

Syllabus

INSTRUCTOR CONTACT INFORMATION:

| | | | |
|----------------------|--|----------------|----------------|
| Instructor: | Kim Olsen | Phone: | (619) 594-2649 |
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| Website: | www.geology.sdsu.edu/people/faculty/olsen | | |
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| Office Hours: | Thu 3-4pm or by appointment. | | |

COURSE MEETINGS

GMCS Computer Lab Fri 03:00-5:40 pm. Additional meeting days/times after the IBA seismic data release will be determined.

Course Description:

The objective of this course is to prepare a team of five (5) graduate Geology students to compete for the AAPG sponsored Imperial Barrel Award. The regional competition is to be held in Monterey, CA. The successful regional team will compete in the finals at the National AAPG Convention.

Prior to the arrival of the data set, the **Elements** and **Processes** necessary for the development of a successful **Petroleum System** will be reviewed. Additionally, an introduction to electric log principals and interpretation will be presented. The appreciation and understanding of this material will be much more meaningful when the data set arrives and the process of analysis and evaluation begins.

Seismic stratigraphy is an important part of petroleum exploration. This course includes a required short course in seismic stratigraphy, to be held at University of California at Santa Barbara, February 9-10, 2013. Details and logistics to follow for the participants.

The IBA presentation will follow the methodology of Petroleum Basin Analysis including seismic interpretation using Kingdom Suite to generate subsurface structure and isopach maps to define potential source intervals and areas, migration pathways, trap and seal areas. The seismic will also be used to assist in correlating between the wells given in the data set. Mr. Bennett Spevack, Geophysicist, will assist in the interpretation of the seismic data.

Reservoir parameters defined by core and electric log analysis will be used for oil in place (OOIP) volumetric calculations and subsequent reserve (economically recoverable hydrocarbons) estimates of the identified prospects. Play Element risk will be applied to each of the prospects following an evaluation using a Data Adequacy Matrix chart.

Economic evaluation of the prospects, including drilling and development costs, income based on an anticipated production decline curve and the time value of money will be made to support the logic of your recommendations.

The student team will prepare a 25 minute Power Point presentation of their findings, with each student responsible for delivering a 5 minute segment of the presentation.

GRADING

This course is graded on the following scale, based on course participation and performance in the preparation for the IBA presentations:

| Grade | Percentage (%) | Grade | Percentage (%) |
|-------|----------------|-------|----------------|
| A+ | 97-100 | C+ | 77-79.9 |
| A | 93-96.9 | C | 73-76.9 |
| A- | 90-92.9 | C- | 70-72.9 |
| B+ | 87-89.9 | D+ | 67-69.9 |
| B | 83-86.9 | D | 63-66.9 |
| B- | 80-82.9 | D- | 60-62.9 |
| | | F | <59.9 |