Fundamentals of Seismic Interpretation (GEOS 5380)

University of Texas at Dallas, Spring 2006 semester,
Founders Wednesday 7-9:45PM FO 2.604 , (Jan 11 th -April 24th)

Course Information

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Course Syllabus

60% of the course grade will be based upon interpretation of seismic data on the
work station and/or paper seismic data. 40% of the course will be based upon exercises, projects and a final exam.

1. Exploration Seismology Fundamentals: (Week 1)
2. Interpretation Methods & Strategies: (Week 2)
3. Structural interpretation of seismic data(Extension): (Week 3)
4. Structural interpretation of seismic data(Compression): (Week 4)
5. Sequence Stratigraphy: (Week 5)
6. Sequence Stratigraphy (Clastic systems): (Week 6)
7. Sequence Stratigraphy (Carbonate systems): (Week 7)
8. Salt Tectonics: (Week 8)

Spring Break

9. DHI and AVO Effects: (Week 9)
10. AVO theory (Week 10)
11. AVO and seismic attributes (Week 11)
12. Case Studies (Week 12)
13. Case Studies (Week 13)

• 60% of the course grade will be from assigned projects to be done on PC workstations or from hardcopy 2D seismic data that will include the following as well as additional projects.

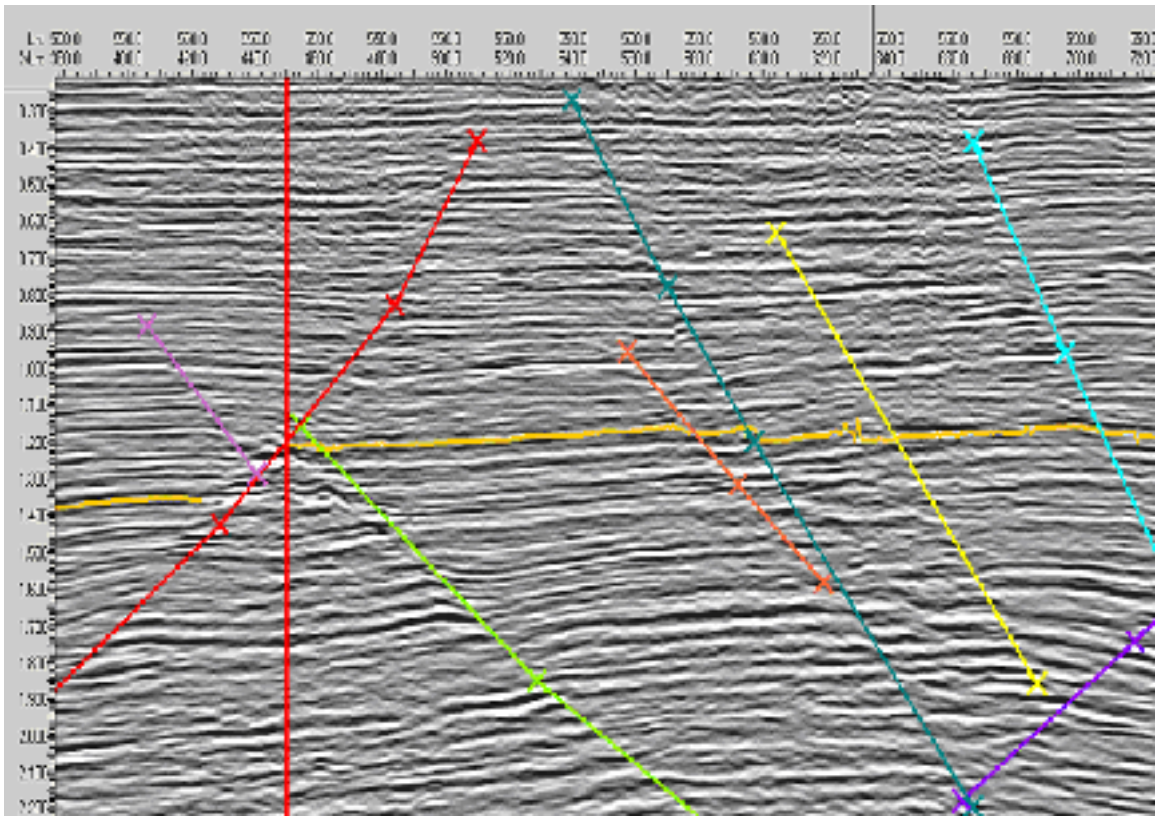
Project 1- Interpretation of 3-D seismic data, Golden Trend-Oklahoma

This 3D project involves interpreting several faults and a channel complex. Students will be expected to tie wells to the seismic, interpret several horizons,

map all of the faults and create two-way time and depth maps. A report will be required that is created in Microsoft Powerpoint.

Project 2-West Africa Projects

Additional 3D interpretation projects will be assigned after the Stratton and Golden projects. One of these will be in Nigeria and will be across a producing field with AVO data. This complexly faulted area will be mapped on several horizons, faults will be mapped and two-way time/depth maps created. The AVO data will be overlain on the depth maps to reduce exploration risk. Each student will complete a report in Powerpoint format that will show their work and their recommendations for drilling wells.



Additional 3D projects will be given during the semester as they are available.

Text book and Readings

All PowerPoint slides and notes will be made available on a website after each lecture where they can be downloaded (www.filesanywhere.com). The password will be given to registered students.

Selected articles from the SEG Leading Edge. Specific relevant articles are available online and will be assigned as reading weekly during the course, SEG Digital Library www.seg.org, http://www.segdl.org/tle

Interpretation of Three-Dimensional Seismic Data, Memoir 42 (6th ed.), 1996. By A. R. Brown. AAPG, This new, completely revised edition features color throughout, new and completely revised text, and more than 80 new illustrations. A standard text for 3-D interpretation, this book should be on every geologist's and geophysicist's bookshelf. Not required to buy for course.

Hardbound, 444 p., color, index. ISBN 0-89181-346-2
AAPG Member Price: $69 List price:$99
http://bookstore.aapg.org/

M42 - Intrepretation of 3-D Seismic Data - 6th edition **Price: $ 69.00**

By Alistair R. Brown
AAPG Memoir 42, 6th Edition
Product Code 708; List Price: $99
AAPG Member Price: $69

Product Demographics

Publisher: AAPG and SEG
Date of Publication: 11/10/2005
ISBN Number: 0891813640
Format: Hardcover, color illus., index
Pages: xviii, 541

Product Description

This book has been the standard text on methods of 3-D seismic interpretation since its first publication in 1986. With 18,000 copies now sold, popularity is well established worldwide.

This new edition keeps the material current and several new examples and methods have been incorporated. However, many long-established interpretation methods are still valid and they feature prominently.

The prime focus is the synergy between 3-D data and the workstation. Extraction of more geologic information is emphasized throughout. The author believes that many interpreters underutilize their data. This book passionately addresses that problem.