

Course:

3D Seismic for Geologists and Engineers

Instructor:

Christopher Liner

Summary:

This is a survey course on acquisition, processing, and interpretation of modern 3D seismic data. Particular emphasis is given to historical development, design criteria, applications, and limits of the seismic method. The course is non-mathematical, but hand-calculator exercises are used to reinforce key concepts. Also, an Excel workbook is supplied to each participant that allows easy application of course concepts to new projects.

Target Audience:

This program is designed for anyone whose job directly or indirectly involves 3D seismic data. It is targeted to petroleum engineers, geologists, and non-seismic geophysicists. Other participants can include independent operators, technical managers, and landmen.

Approximate Course outline

Day 1

- Acquisition
 - General properties of waves
 - Understanding seismic events
 - 2D Land acquisition
 - Survey predesign
 - Land shooting geometry
 - Marine shooting geometry

Day 2

- 3-D seismic survey design exercise
- Processing
 - Processing and binning overview
 - Computing
 - Creating the CMP stack
 - Migration I: Concepts
 - Migration II: Classification

Day 3

- Interpretation
 - Synthetic seismogram, tuning, and resolution
 - Data volume
 - Structure
 - Stratigraphy
 - Seismic attributes
 - Amplitude in space, time, and offset