

**Course Code**

GP06

**Course Name****General Aspects of Geophysics in Oil and Gas Exploration****Instructor**

Dr. Altan Necio lu

**Professional Career**

He graduated from Istanbul University with a B.S. in geophysics. Worked for MTA (Mineral Research and Exploration Institute of Turkey) for copper and lead exploration. Dr. Necio lu obtained his M.S. and Ph.D. degrees from St. Louis University, U.S.A. After returning home he again worked for MTA and involved in rigging the seismic vessel MTA Sismik 1, setting up the seismic processing center, and so forth. Then he joined Middle East Technical University, helped installing ANTO seismological observatory, taught exploration geophysics, elementary and advanced seismology and surveying at the department of geological engineering. He was an UNESCO's earth science specialist in Quadi-i-Azam University, Pakistan in 1983-1984. Dr. Necio lu taught in King Fahad University of Petroleum and Minerals and operated the first seismological station DHR in Saudi Arabia between 1984 and 1986. He went back to the Middle East Technical University for a short period and joined to the Seismological Geophysical Observatory, King Saud University, Riyadh, Kingdom of Saudi Arabia.

He came home to Ankara University's Department of Geophysical Engineering, supervised 10 or so master thesis, taught elementary and advanced earthquake seismology, mathematics for geophysical engineers and computer programming, before retiring. Currently, Dr. Necio lu is a part time instructor in Gazi University.

**Course Objective and Description**

It is intended to introduce geophysical techniques for oil and natural gas exploration to the non geophysicists; geologists, petroleum and natural gas engineers and managerial staff.

The topics involve seismic reflection, refraction, data acquisition on land and sea, seismic processing procedures, potential methods: gravity and magnetic, land and airborne applications, processing and interpretation techniques.

The topics will also cover geophysical well logging, and geothermal exploration.

**Who should Attend**

Junior geophysics, geologists, petroleum engineers and managers.

**Prerequisite**

Calculus, physics and geology

**Learning Level**

Introductory

**Duration**

5 days

**Course Material**

Will be supplied by the instructor

## Day One

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- Introduction to geophysical methods
  - Seismic methods
  - Laws governing wave propagation, Fermat's principle, Snell's law
  - Refraction
  - Reflection

## Day Two

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- Data acquisition on land and the sea
- Data processing
- Geological interpretation

## Day Three

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- Potential methods
- Gravity measurements for the mapping of the subsurface
- Data reduction and representation
- Interpretation of gravity data
- Principles of magnetic method
- Data reduction, representation and interpretation

## Day Four

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- Geophysical well logging
- Physical parameters measured
- Field application
- Interpretation of different well logs

## Day Five

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- Geothermal Exploration
- Field techniques
- Mapping the hot sources
- Interpretation
- Case histories of various methods