SEISMIC EXPLORATION FOR PETROLEUM

Course Name	Course ID	Prerequisite
SEISMIC EXPLORATION FOR PETROLEUM	*EGP 371*	*EGP211*

Course Description

Theory of seismic methods, geometry of seismic wave paths, field equipment and instruments, land and marine seismic explorations, improvement in data treatments, analysis of seismic sections and their correlation case histories of hydrocarbon reservoir explorations.

Course Objectives

1. Definition of seismic theory and seismic waves, raypaths and modes of propagations.
2. Emphasis of seismic reflection method (basic theory and data analysis).
3. Video films and photo galleries are used to give an idea on up-to-date technologies in:
   - seismic inland and offshore field equipments,
   - different and advanced seismic inland and offshore survey techniques.
   - Basic seismic processing and interpretation procedures.
4. Presenting various case histories illustrating the role of methods in geologic modeling and prospect evaluation.

General References for the Course: (Books/Journals…*etc*.)

Students in this course can read from:
1. *Applied Geophysics,* by Telford, W.M., Geldart, L.P., Sheriff, R.E., 1990, 2002.

Cambridge University Press.

2. *Basic Exploration Geophysics,* by Robinson, E.S. and Coruh, C., 1998. John Wiley & Sons, NY, USA.
3. *Exploration Geophysics of the Shallow Subsurface,* by Burger, H.R., 1992. Prentice-Hall PTR, Englewood Cliffs, NJ.
4. *Seismic Interpretation Series (Volumes 1, 2 & 3),* SEG Series, 1990. SEG-publications, Tulsa, OK, USA.
5. *The Reflection Process. Seismic Series (Educational Manual),* by Ansty, 1990. SEG-publications, Tulsa, OK, USA.

List of URLs for this Course

- www.geophysics.co.uk/
- http://socrates.berkeley.edu/

Course Outcome

The student is able to know the seismic theory, types of seismic waves, and types of

seismic techniques. Student will also learn the following:

1. Student can use the equipments used in both on and offshore.
2. Student can appply basic theory to collect velocity and thickness.
3. Student can perform some basic processing schew (NMO, Migration).
4. Student can interpretation of seismic data.