Faculty of Earth Sciences

Geophysics Department

The Geological Society
Accredited degree courses

GEOPHYSICAL APPLICATIONS

Course Name	Course ID	Prerequisites
GEOPHYSICAL APPLICATIONS	***EGP 471***	***EPS 211 / EGP 211 / ESR 211***

Course Description

Study of significance of shallow geophysical exploration methods in determining groundwater aquifers of different kinds and the buried environmental targets. Exploration for oil and ores. Determination of geologic structures.

Course Objectives

This course aims at the following studies:

1. To delineate the significance of the geophysical techniques in various aspects of exploration.
2. To evaluate the relation between different types of rocks & minerals.
3. To learn about the planning of exploration projects that involves geophysical works.
4. To learn about the geophysical data acquisition, presentation and interpretation with respect to geological information.
5. To teach some cases on applications of geophysical techniques for various exploration purposes.

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

Students in this course can read from:

1. *Applications Manual for Portable Magnetometers*, by Breiner, S., 1973. EG&G GeoMetrics, Sunnyvale, California.
2. *Basic Exploration Geophysics*, by Robinson, E.S., and Coruh, C., 1988. John Wiley & Sons, NY.
3. *Elementary Gravity and Magnetic for Geologists and Seismologists. Monograph*

Series, No. (1), by Nettleton, L.L., 1971. SEG. Tulsa, OK, USA.
4. *Exploration and Mining Geology. Department of Mining and Geological Engineering*, by Peters, W.C., 1978. The University of Arizona. USA.
5. *Exploration Geophysics of the Shallow Subsurface*, by Burger, H.R., 1992. Prentice-Hall PTR, Englewood Cliffs, NJ.
6. *Mining Geophysics: Methods in Geochemistry and Geophysics*, by Parasnis, D.S., 1973. Elsevier, Amsterdam.
7. *Nuclear Methods in Mineral Exploration and Production. Development in Economic Geology*, by Morse, J.G., 1977. Elsevier Scientific Company.
8. *The Geophysics of the Elura Orebody, Cobar, New South Wales*: the proceedings of the Elura Symposium, Sydney, 1980

List of URLs for this Course

- www.google.com
- www.igme.gr/e30.htm

Course Outcome

The student is able to apply the geophysical tools in different exploration targets (oil, minerals, and groundwater). He is also supposed to know the following:

1. Student can do the significance of the geophysical techniques.
2. Student knows the types of geophysical exploration applications.
3. Student knows the geophysical data acquiring, presentation and interpretation.
4. Student can Interpret between different geophysical methods.
5. Student can apply some geophysical methods.