

Course Code

GE09

Course Name:**General Aspects of Geological Studies in Petroleum Exploration****Instructor:**

Dr. smail Ömer Yılmaz

**Professional Career**

Dr. smail Ömer Yılmaz is an Associate Professor of sedimentology and stratigraphy in the Department of Geological Engineering of the Middle East Technical University (METU), Ankara, Turkey. He is graduated from METU (B.S) in 1994. and completed his MSc in 1997 and PhD thesis in 2002 on Applications of cyclostratigraphy and sequence stratigraphy in determination of the hierarchy in peritidal and pelagic successions (NW, SW and WNW of Turkey) by using sedimentology and sedimentary geochemistry (Stable isotopes). He completed a part of his PhD in the University of Tubingen in Germany. He carried out National Scientific Research Projects about applications of cyclostratigraphy, sequence stratigraphy and sedimentary geochemistry in Turkey and involved in many international and national scientific projects as a researcher with similar subjects.

Course Objectives and Description

The Geology course is designed to educate both geologists and non-geologists to give fundamental knowledge about Earth's structure, dynamic processes, mechanisms, composition and background on the geological events and deformations. This course is basic and essential for understanding the applications and interpretations in any geological exploration work including petroleum exploration. At the end of the course some basic applications in the class and in the field will be given.

Who Should Attend

Non-geologists, Petroleum Engineers, geophysists, managers

Prerequisite

Non

Learning Level

Introductory

Duration

5 days

Course Material

Handouts, PPT slides, some rock samples

Day One

- Introduction
- Earth's interior
- Plate tectonics
- Minerals
- Igneous Rocks

Day Two

- Weathering and soils
- Sedimentary rocks
- Depositional environments (Coasts, Deserts, Glaciers, Rivers, Deltas, Ocean, Lakes)
- Metamorphic rocks
- Rock cycle

Day Three

- Mass movements
- Water cycle
- Drainage
- Surface water and Groundwater

Day Four

- Deformation of rocks
 - Earthquakes
 - Geological time and dating methods
 - Basic principles (unconformities, cross-cutting relationships)

Day Five

- Petroleum generation and source rocks
 - Marine
 - Lacustrine
- Petroleum migration and Accumulation
- Petroleum reservoirs and reservoir rocks
 - Carbonates
 - Clastics
 - Trap types