

22ND – 24TH APRIL 2015

INTRODUCTION TO PETROLEUM GEOLOGY & GEOPHYSICS

With the onshore discoveries plummeting, offshore will be the main focus, particularly in deeper waters or in more remote locations, where the harsher climate and water depth will certainly pose greater challenges.

This 3-day course is intended to help participants understand the fundamental principles and methods of petroleum geology and geophysics, which is the key to success in oil and gas exploration and field development. You will be introduced to the theory and methods of petroleum geology and geophysics at a readily accessible level, gain further insight by seeing how the professions have evolved since their early days, and continue to advance as we explore in more challenging environments. The information will be presented in a clear, concise fashion with class interaction, exercises and real world examples.

There are no prerequisites to attend this course. The information presented will be of value to anyone wanting a better understanding of the fundamental exploration methods that lie at the heart of the petroleum industry.

Topic Outline

Fundamentals of Earth Science

- Composition and geological characteristics of the earth
- Elements, rocks and minerals
- Plate tectonics
- The rock cycle

Petroleum Geology

- Historical and modern exploration methods
- Fossils and the geologic time scale
- Weathering and erosion
- Types of sedimentary rocks
- Types of reservoir rocks and their implications for petroleum exploration
- Types of source rocks and their implications for petroleum exploration
- Maturation of source rock and the oil and gas window
- Migration of hydrocarbons
- Hydrocarbon trap types
- Tectonic environments and the creation of sedimentary basins
- Timing of basinal events and importance to basin prospects - 'The critical moment'
- Sedimentary rock fill in different depositional environments
- Global distribution of tectonic basin types and implications for petroleum prospect

Drilling

- Fundamentals of the drilling method
- Onshore drilling
- Offshore drilling
- Types of offshore drilling rigs
- Well logs and what they tell us
- Drill core and sidewall core
- Types of offshore drilling rigs
- Directional and horizontal drilling
- Drilling challenges
- Drilling costs

Petroleum Geophysics

- Fundamental principles of geophysics
- Gravity, magnetic and electromagnetic methods
- Reflection seismic
- Refraction seismic
- Onshore seismic data acquisition
- Offshore seismic data acquisition
- Seismic processing
- Understanding and detecting geo-hazards to drilling
- New Technology trends

Seismic Interpretation

- Integration of geological, geophysical and engineering data
- Synthetic seismograms
- Vertical Seismic Profiles
- Structural and stratigraphic interpretation
- Creating geological cross sections and maps
- Seismic attribute analysis (e.g. Amplitude vs. offset)
- Calculating reserves and resources

Field Development, Transportation and Refining

- Onshore production systems
- Offshore production systems
- Construction of offshore production systems
- Offshore production systems used around the world
- Trends in production system technology
- Oil and gas transportation
- Liquefied natural gas
- Refining
- Distribution of global reserves
- Summary of steps in the exploration to production process

Register Now!

For full details on the programme principal facilitator and to register, do not hesitate to contact us.

E-mail: enquiry@petro1.com.my

Tel: +603-7727-3952

www.petro1.com.my



TECHNICAL CONSULTANCY FOR OIL & GAS INDUSTRY

Petroleum Engineering Division