# Development Geology

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| **Course Duration** | : | 5 Days |
| **Date** | : | 02-Sep-2024 to 06-Sep-2024 |
| **Location** | : | Kuala Lumpur |
| **Type of Participant** | : | This training course is designed for and will greatly benefit Reservoir, development, and exploration Geologists, Geophysicists, Petrophysicists, Log Analysts, Petroleum Engineers and experienced technicians. |

**Summary:**

This course is designed to get participants familiar with the techniques and tools needed to create a development plan for a field with optimal recovery. Through a set of lectures and practical exercises, attendees will gain knowledge on the factors affecting the the development of an oil and/or gas field. The integration approach for the geological, geophysical, petrophysical and engineering data to better understand the subsurface geology, characterize the reservoir and building a high-resolution 3D static model will be emphasized. It also extends to cover the reserve calculation and associated risk and uncertainties, as well as the economical parameters affecting the field development plans.

**Objective:**

Participants will learn how to

- Use subsurface tools; seismic, cores, logs and test data to better describe and characterize their reservoirs
- Understand the different depositional settings and reservoir quality for the carbonate and clastic reservoirs
- Become familiar with the influence of sequence stratigraphy on the reservoir

geometry

- Describe and quantify the different factors affecting a development plan
- Select optimum drill sites for field development
- Calculate the volumetric of a field and measure the associated risk and uncertainties
- Analyse and describe the different reservoir properties
- Become familiar with the fluid properties
- Build a basic 3D static model
- Detect the drive mechanism of a field
- Select the most economically positive development plan

**Contents:**

- **Basic Definitions**
- **Field Life Cycle**
- **Factors Affecting Field Development**
    - **Reservoir Geology**
        - **Depositional Environment (Sedimentological influence)**
            - Carbonate Classification and depositional environment
            - Clastic depositional environment and classification
            - Influence of diagenesis on the reservoir quality
        - **Reservoir Connectivity (Stratigraphic influence)**
            - Refreshment on Sequence Stratigraphy concepts
            - Cyclicity and Stratal terminations
            - Reservoir Connectivity; areal and vertical
        - **Reservoir Framework (structural influence)**
            - Tectonic Framework
            - Small-Scale Structures (Faults. Folds, Diaprism)
    - **Reservoir Properties**
        - Porosity
        - Permeability
        - Wettability
        - Capillary Pressure
        - Relative Permeability


    - **Fluid Properties**
        - Physical and Chemical Properties
        - Fluid Pressure Gradient
        - Fluid Contact with Pore Space
    - **Driving Mechanisms**
- **Development Geology Tools**
    - Logs
    - Test
    - Seismic
    - Cores
    - Maps and Cross Sections
- **Reserve Calculation**
- **Risk and Uncertainty in field development plans**
- **Developing Fractured Reservoirs**
- **3D Modeling Techniques**
    - Concept of Reservoir Modeling
    - Deterministic and Stochastic Modeling Techniques
- **Secondary and Tertiary development plans**
- **Economics parameters in field development**
- **Case Studies**