

Clastic Reservoir Characterization (5 days)

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Business context:

The main objective of a development team is to identify the type and scale of heterogeneity that is most likely to affect the distribution of non-recovered mobile oil and gas in their subsurface reservoirs. The clastic depositional environment is particularly complex and many factors may cause a lower than expected recovery. Outcrops, cores, borehole images, logs, production test and reservoir level seismic can help provide detailed information about architecture, fluid flow and the heterogeneities in a reservoir.

The objective of this course is:

- understanding depositional parameters defining the reservoir architecture,
- the use of tools to predict subsurface reservoir architecture
- the impact of the heterogeneities on reservoir performance at different scales.

Who should attend:

Geophysicists, geologists, petrophysicists and reservoir engineers involved in exploration, appraisal and development of clastic oil and gas accumulations.

Content of the program:

- Framework for reservoir modeling
- Depositional processes and deposits
- Geological features influencing hydrocarbon recovery
- Clastic Reservoir Architecture, determination of architecture from seismic, logs, tests and core data
- Geologic controls on porosity and permeability
- Trap type and compartmentalization of the reservoir
- Faults, fractures and fluid flow. Sealing capacity of faults; shale baffles
- Core acquisition, analysis and interpretation
- From geological data to engineering models
- Principles of up scaling and application of Geostatistics
- Capturing subsurface uncertainties in volume estimates

Learning, methods and tools:

The course is designed to provide the best possible interaction between lectures and multidisciplinary team exercises. The course focuses on understanding the needs of the different parties that are involved in reservoir performance prediction. At the end of the course, the participants will be able to present their strategies in the development of a clastic oil reservoir.