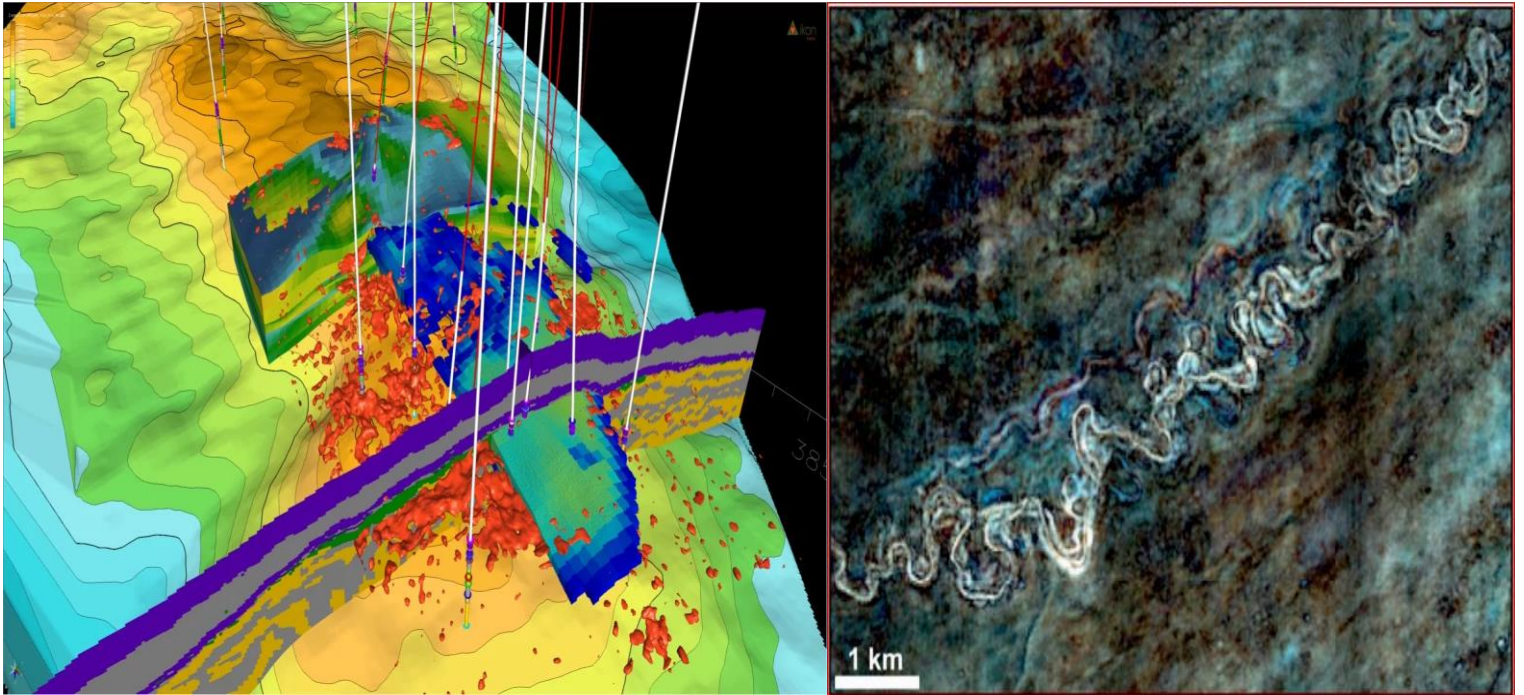




# Reservoirs Characterization & Analysis

## Purpose of the course:

Participants to this intensive Reservoir Characterization training course should be geologists Geophysicist and engineers who deal with all risk variables to decide where, when and why to drill and what is expected from this drilling on both short and long term and finally how to maximize the life and return from such drilling.

By choosing this ICTD training course, the participants will be able to evaluate all type of involved data; good or bad, important or less important, rank different interpretation, risk all possible probabilities and conclude the best applicable scenario to work with. Participants will be able, despite their different working sectors, to deal with: variable type of rocks, petrophysical parameters involved, multiple diagenesis, analyze the main facies in concern (barriers or reservoirs), interpretation of seismic facies classification, logs, maps, correlations and data distribution.

Teach principles of cooperation between different G&G tools to detect sand heterogeneous of different sand bodies.

Map rock bodies to create lithofacies models for subsurface intervals at basin, regional and field scales.

Predict original depositional setting through integration of lithofacies data with bio stratigraphic, seismic and well data.

Evaluate diameter data and borehole imaging logs and relate to lithology, wireline log response and to use core log calibrations as guides for uncored wells.

## Suitability - Who should attend?

This ICTD training course is for all professionals in the exploration and reservoir engineering departments and geoscientists in the development sector wishing to Reservoir Characterization and learn how to work together in integrated.



# How will this Training Course be presented?

The instructor will involve the participants not only by showing and interpreting the training course material in detail, but they will work together by projecting their previous knowledge onto the course. Several real examples will be studied in addition to the applied projects on different G&G software to elaborate on the role of reservoir characterization to modeling. During the training course path, a self-evaluation point quizzes will be run to stimulate all brains no matter which discipline

## Personal Impact

Upon completion of this ICTD training course, participants will be able to integrate core data results with well log analysis, with all advanced seismic reservoir characterization.

Also, participants will be familiar with challenges in each depositional environment which will help them to accurately construct reservoir static models and integrate results with reservoir engineering.

In addition to the participants, will sharing in applied projects in G&G software's to be familiar how to integrate all the available geophysical and geological data

## Training Course Content

### ■ From Rocks to Reservoir and Reservoir Characterization

- Reservoir from sedimentological /field point of view
- Rock types
- What is meant by Reservoir Characterization
- Carbonate rock classification and structure
- Impact of carbonate diagenesis on Reservoir Characterization
- Carbonate porosity and fracture impact on Reservoir Characterization

### Textural and Structure Impact on Reservoir Characterization

- Clastics classification and structure
- Carbonate geometry Vs Reservoir Characterization



- Reefal reservoir facies
- Clastics texture, porosity and packing Vs Reservoir Characterization
- Clastics petrography and photomicrograph
- Carbonate petrography and photomicrograph
- Geologic Controls on Reservoir Quality.
- Petrophysical Rock Properties
- Porosity
- Permeability
- Pore Size and Fluid Saturation
- Exercise: Petrel project How to use the Seismic Attribute to detect Sandstone Reservoir Quality

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### Impact of Different Depositional Environment on Reservoir Characterization

- From diagenesis to depositional environment
  - Fluvial depositional environment
  - Main Aeolian depositional environment
  - Different Deep marine depositional environment
  - Deltaic and tidal depositional environment
  - Supratidal depositional environment and sabkhas
  - Exercise: Petrel Project How to Extract Sand Geobody with Good Quality
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### Reservoir Uncertainties, Trapping and Modeling

- Carbonate reservoir uncertainties
- Impact of Reservoir Characterization to the different reserves cases min to max, P10 to P90, etc
- From Reservoir Characterization to trapping
- Factors controlling Reservoir Characterization in a Petroleum system
- From reservoir data to geostatistics
- Reservoir Characterization and static modeling tree who is first?
- Reservoir modeling steps,



- Impact of Thin layers, hidden facies and shoulder effect on Reservoir Characterization
- Exercise: Petrel Project How make seismic facies classification as a type of reservoir characterization.

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### Reservoir Characterization and Reservoir Modeling - Criteria and Case Studies

- Define reasons for Cutoffs and por/perm chart usage
  - Relate Reservoir Characterization to facies and FZI
  - From static to dynamic reservoir modeling one or 2 team
  - Integrated Reservoir Characterization Vs reservoir heterogeneity
  - Reservoir Characterization and modeling real cases
  - Exercise: applied Project How to Extract integrate all G&G data in the 3D static model
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## Course Certificate:

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International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

## Course Methodology:

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**A variety of methodologies will be used during the course that includes:**

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation



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# Course Timings:

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## Daily Course Timings:

|               |                            |
|---------------|----------------------------|
| 08:00 - 08:20 | Morning Coffee / Tea       |
| 08:20 - 10:00 | First Session              |
| 10:00 - 10:20 | Coffee / Tea / Snacks      |
| 10:20 - 12:20 | Second Session             |
| 12:20 - 13:30 | Lunch Break & Prayer Break |
| 13:30 - 15:00 | Last Session               |

