Fundamentals of Reservoir Engineering

15 - 19 Jul 2018, Abu Dhabi
**Introduction**

This GLOMACS’ Fundamentals of Reservoir Engineering training seminar introduces reservoir engineering concepts and methods to enable cross-disciplinary exchange of ideas and experience. It provides the required input to help you understand questions crucial to the reservoir engineer: How much oil & gas is there (accumulation)? How much can be recovered (reserves)? How fast can it be recovered (rate)? By the end of this GLOMACS training seminar, participants will have gained a foundational understanding of reservoir engineering that they can use while moving forward in their training.

This GLOMACS training seminar will feature:

- Discussions on the role of reservoir engineering in exploration and production as well as how reservoir engineers interact with other disciplines in the Petroleum Industry
- A description of Reservoir rock properties, Darcy’s Law and Fundamentals of fluid flow in a porous media
- A description of Reservoir fluid phase behaviour and reservoir fluid properties
- An Overview of well testing and application of the diffusivity equation
- An outline of different drive mechanisms and discussion of the recovery factors
- Principles of Material Balance and Decline Curve Analysis
- Use of fractional flow equations and Immiscible displacement concepts
- Definition of reserves, estimation of oil and gas in place and Production Forecasts

**Objectives**

By the end of this GLOMACS training seminar, participants will:

- Calculate the volume of hydrocarbon in place and recovery factors
- Derive the general material balance equation, modify it and use it to calculate hydrocarbon in place for gas reservoirs, saturated reservoirs and under saturated reservoirs
- Use the Havlena and Odeh technique to determine oil in place for saturated reservoirs and under saturated reservoirs
- Use of well testing data in determining average reservoir pressure, productivity index, permeability, and skin effect
- Discuss the recovery factors of different drive mechanisms
- Explain the use of fractional flow equations and Immiscible displacement concepts
- Perform decline curve analysis

**Training Methodology**

This GLOMACS’ Fundamentals of Reservoir Engineering training seminar will utilise a variety of learning techniques to ensure maximum understanding, comprehension and retention of the information presented. The daily workshops will be highly interactive and participative. This involves regular discussion of applications as well as review questions on each topic.

**Who Should Attend?**

This GLOMACS training seminar is suitable to a wide range of professionals but will greatly benefit:

- Petroleum and Reservoir Engineers who need to determine accurate values of the properties of reservoir gas, oil and water for use in engineering calculations and Simulation studies
- Production and Operations Engineers who want to have an understanding of the way reservoir fluids behave, the reservoir depletion process and reservoir drive mechanisms
- Reservoir, Production and Operations Engineers who need to determine oil and gas production rates and production forecasts
- Petro-physicists, Geo-physicists, Geologists and Non - Engineers who work in teams with Petroleum and Reservoir Engineers to estimate hydrocarbon in place and reserves and to perform reservoir characterisation studies
- Managers who seek to derive greater decision making on field development
**Day 1**

**Reservoir and Reservoir Engineering Basics**
- Introduction to Reservoir Engineering
- Reservoir Life Cycle
- Reservoir Environment and Formation Properties
- Identification of Contacts
- Definition of Reservoir Pressure
- Determination of Pressure Gradients

**Day 2**

**Reservoir Conditions**
- Reservoir and Surface Conditions
- Formation Volume Factor, Viscosity, Solution Gas-oil Ratio, API Gravity, Specific Gravity
- Estimating Gas, Oil, and Water Properties from Correlations
- Application of Deviation Factor to Ideal Gas Law
- Darcy’s Law and Fundamentals of Fluid Flow
- Relative Permeability Concept

**Day 3**

**Reservoir Fundamentals**
- Principles of Well Testing in Reservoir Characterization
- Estimation of Average Pressure
- Application of Diffusivity Equation to Steady State, Semi-steady State and Unsteady-state Flow
- Applications of Line Source Solution to Determine Reservoir Pressure
- Overview of Well Testing Techniques
- Use of Well Testing

**Day 4**

**Reservoir Drive**
- Reservoir Drive Mechanisms
- Principles of Material Balance Analysis
- Use of Fractional Flow Equations
- Immiscible Displacement Concepts
- Recovery Concepts

**Day 5**

**Reserve Estimation and Production Forecasting**
- Definition of Reserves
- Recovery Factor-API Correlations
- Estimation of Oil-in-Place
- Estimation of Gas-in-Place
- Production Forecast – Decline Curve Analysis
REGISTRATION DETAILS

LAST NAME:________________________________________
FIRST NAME:_______________________________________
DESIGNATION:_____________________________________
COMPANY: ________________________________________
ADDRESS: ________________________________________
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CITY:______________________________________________
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AUTHORISATION DETAILS

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PAYMENT DETAILS

☐ Please invoice my company
☐ Cheque payable to GLOMACS
☐ Please invoice me

CERTIFICATION

Successful participants will receive GLOMACS’ Certificate of Completion

4 WAYS TO REGISTER

Tel: +971 (04) 425 0700
Fax: +971 (04) 425 0701
Email: info@glomacs.com
Website: www.glomacs.com

TERMS AND CONDITIONS

• Fees – Each fee is inclusive of Documentation, Lunch and refreshments served during the entire seminar.
• Mode of Payment – The delegate has the option to pay the course fee directly or request to send an invoice to his/her company/sponsor. Credit card and cheque payments are both acceptable.
• Cancellation / Substitution – Request for seminar cancellation must be made in writing & received three (3) weeks prior to the seminar date. A US$ 250.00 processing fee will be charged per delegate for each cancellation. Thereafter, we regret that we are unable to refund any fees due, although in such cases we would be happy to welcome a colleague who would substitute for you.
• Hotel Accommodation – is not included in the course fee. A reduced corporate rate and a limited number of rooms may be available for attendees wishing to stay at the hotel venue. Requests for hotel reservations should be made at least three (3) weeks prior to the commencement of the seminar. All hotel accommodation is strictly subject to availability and terms and conditions imposed by the hotel will apply.
• Attendance Certificate – a certificate of attendance will only be awarded to those delegates who successfully completed/attended the entire seminar including the awarding of applicable Continuing Professional Education Units/Hours.
• Force Majeure – any circumstances beyond the control of the Company may necessitate postponement, change of seminar venue or substitution of assigned Instructor. The Company reserves the right to exercise this clause and implement such amendments.
• Fair Access / Equal Opportunities – In the provision of its services as a world-class Training Provider, the Company is committed to provide fair access / equal opportunities throughout the delivery of its courses and assessment leading to the completion of training seminars, or 3rd party qualifications/certifications.