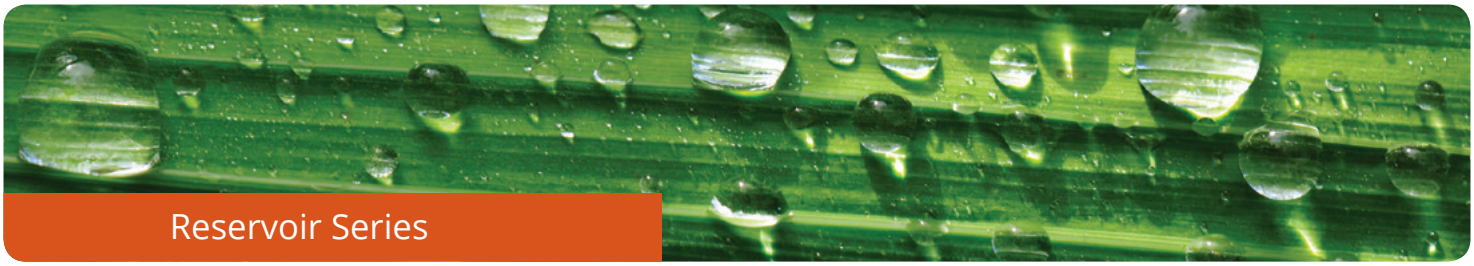


Reservoir Series

Applied Reservoir Engineering

Designed for:
The course is aimed at PDO petroleum engineers early in their industry careers who require a secure grounding in the technical fundamentals of reservoir engineering as they apply to PDO operations.

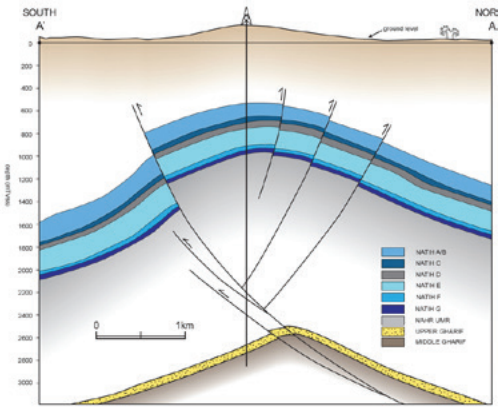
Duration
(days)

1 2 3 4 5

Learning Level:
Skills
Knowledge
Awareness

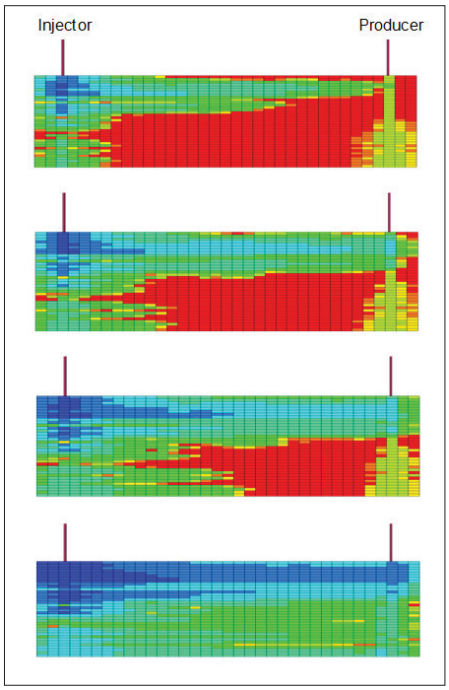
This course has been built specifically for the Middle East and uses dynamic field data from Natih and Gharif reservoirs, mapped on to analogue outcrops around Nizwa.

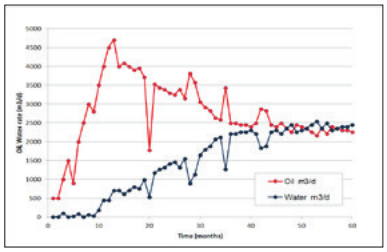
The course revisits the fundamentals of reservoir engineering which every petroleum engineer should understand fully, and applies these fundamentals to the core tasks of reservoir engineer. The course will cover the standard reservoir engineering principles of heterogeneous flow in matrix and fracture systems, the techniques of material balance, oil and gas PVT analysis and well testing. These will be applied to determine well rates, recovery under depletion and waterflood, culminating in production forecasting with associated uncertainty. Running the event partly 'Open Air™' allows the crucial aspect of scale to be appreciated first-hand.

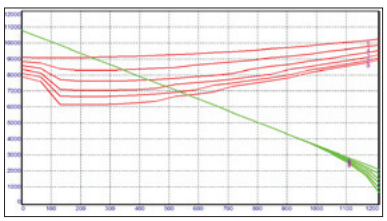


The course makes extensive use of the 'Madmar Field' case study as a red thread to tie these concepts together. Madmar is a synthetic oil and gas field case sized to fit the scaled to the outcrops near Nizwa and populated with data from Natih and Gharif producing reservoirs. The course culminates in a forecasting exercise for the Madmar Field case.

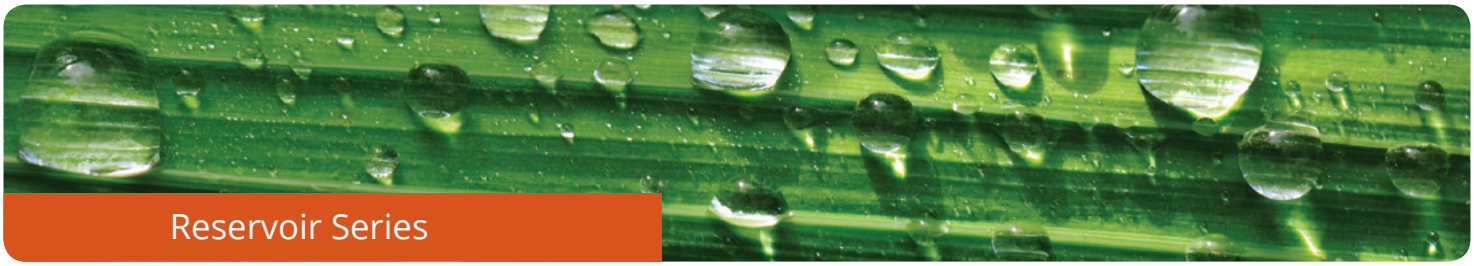
The objective is for petroleum engineers who have had basic training in reservoir engineering to take that knowledge out in to the field, consolidate what they know and build on it. Attendees should come out of the event with a clear view of the component parts of reservoir engineering work, and a thorough understanding of how the components come together to produce forecasts.







Early Development
E&P Overview
Reservoir
Wells
Business & Risk
Open Air
Coaching
Master Class

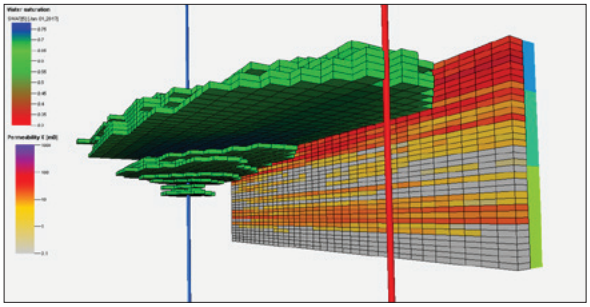


Reservoir Series

Applied Reservoir Engineering continued

Course Content:

- Fundamentals of flow in porous media
- Flow in fractures
- Application of material balance techniques
- Oil and gas PVT
- Well test interpretation
- Determinants of rate
- Recovery under depletion
- Recovery under waterflood
- Productivity of horizontal vs. vertical wells
- Simulation
- Production forecasting
- Forecast uncertainty and resource definition



Course Duration:

Duration is 5 days

Logisitics

Golden Tulip Hotel, Nizwa (3 days) and
Intercontinental Hotel, Muscat (2 days)

Courses available from this series:

Basic Geoscience
Introduction to Geophysics
Geological Application of Well Logs
Openhole Petrophysical Interpretation
Core Description
Production Geology
Applied Production Geology
Reservoir Model Design
Fractured Reservoir Characterisation
Geology for Drilling Engineers
Reservoir Engineering
Applied Reservoir Engineering
Well Test Design & Analysis
Logging While Drilling
Basin Analysis
Geomechanics

Course Tutors

Mark Cook BSc, MBA

Main Series tutoring: Early Development, Business & Risk, Reservoir Engineering
Industry experience: 40 years, reservoir engineering economics and risk analysis
Career background: Shell, AGR (VP) and TRACS
Personal: Author, 'Hydrocarbon Exploration and Production' (Elsevier 2008), 'Petroleum Economics and Risk Analysis' (Elsevier 2021), SPE distinguished lecturer on Risk Analysis

Richard Oxlade MEng

Main Series tutoring: Reservoir, Early Development, Master Class (business)
Industry experience: over 30 years, commercial, reservoir engineering
Career background: BP, AGR and TRACS
Personal: Global advisor, business planning & economic analysis

TRACS International Limited
East Wing First Floor, Admiral Court
Poynernook Road, Aberdeen, AB11 5QX
Tel: +44 (0)1224 024074

Contact
training@tracs.com

www.tracs.com /tracs-international