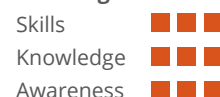# Reservoir Model Design

Designed for:
Geoscientists with some knowledge of reservoir modelling software; reservoir engineers and petrophysicists who work with static reservoir models, and team leaders who wish to have a deeper understanding of the principles behind modelling and how to QC models made by others.

Duration (days)

1 2 3 4 5 flexible

Learning Level:

Skills
Knowledge
Awareness

What differentiates a good reservoir model from a bad one? This course offers a software-independent view on the process of reservoir model design, tackles the underlying reasons why some models disappoint, and offers solutions which support the building of more efficient, fit-for-purpose and successful reservoir models.

Considerable time is dedicated to reservoir modelling exercises in many companies but the results often disappoint: the time taken to build models is often too long, the models too detailed and cumbersome and the model deliverables ultimately not fit-for-purpose. This course tackles the reasons why and offers remedies to fix these problems. The advice is based on the experience of the tutors, who have been involved in excess of 100 reservoir modelling and simulation projects for many companies over the last twenty years.

The central theme of the event is "reservoir model design", on the premise that it is poor design rather than software handling errors which are typically the cause of poor model outcomes.
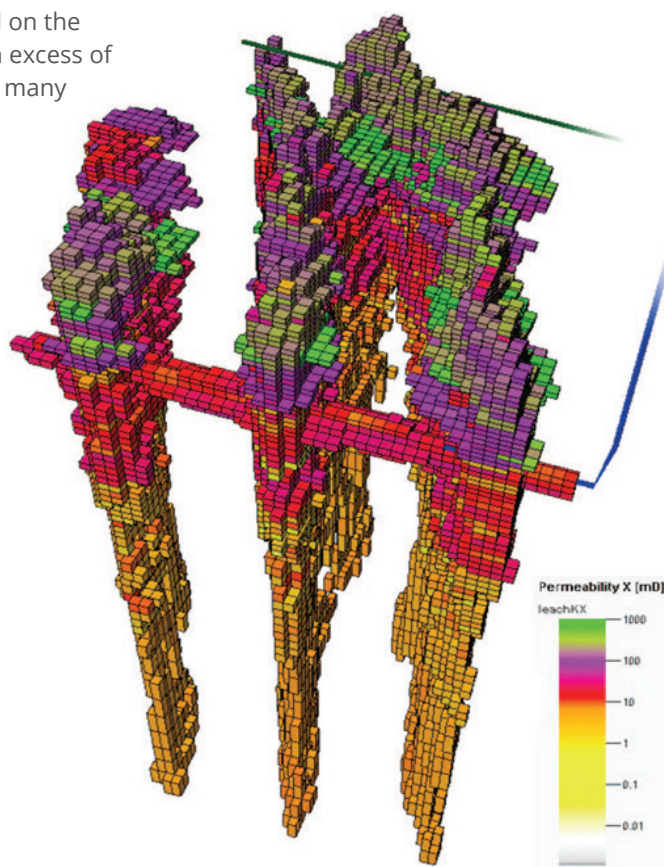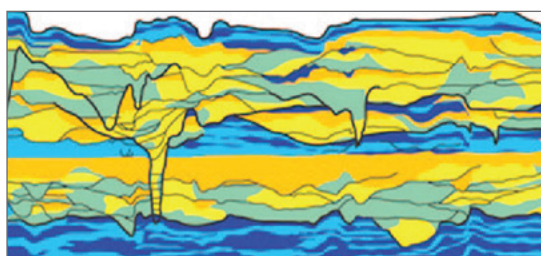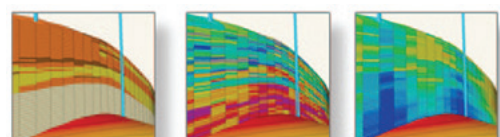
Early Development
E&P Overview
Reservoir
Wells

Business & Risk
Open Air
Coaching
Master Class

Reservoir Model Design - continued

Course Content:

The course content is organised around the following:

- **Model purpose** – why are you logged on in the first place; is the purpose clearly defined?

- **Elements and architecture** – what level of detail do you need to include given the model purpose and the development context? Full-field detail may not be needed.

- **Probability and determinism** – what are our expectations of geostatistics and how do we use them intuitively to represent a reservoir concept?

- **Multi-scale modelling** – static-dynamic upscaling is only part of the story, and not always the main part; the issue is multi-scale and extends from pore-scale behaviour to the full field.

- **Uncertainty-handling** – how to really go wrong.

This is typically a field-based event, combining classroom talks and discussion with access to outcrops on the Moray Firth. The course can equally well be run at other outcrops, currently prepared at locations in England, Wales, France, Spain and the USA (see Open Air™ course summaries). Alternatively, the course can be structured around a company's own field data (log and core), combined with workshop-style reviews of ongoing static modelling work.

Course Duration:

Duration is 3 - 5 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 Bentley PhD
Main Series tutoring: Reservoir, E&P Overview, Open Air and Master Class
I**ndustry experience:** over 25 years, geoscience
Career background: Shell, AGR and TRACS
Personal: Author 'Reservoir Model Design', SPE and EAGE distinguished lecturer, AGR & TRACS Training director, associate professor Heriot-Watt University

John Howell PhD
Main Series tutoring: Reservoir, Open Air
Industry experience: over 25 years, geoscience
Career background: Gaps, University of Liverpool, University of Bergen, Rocksource ASA
Personal: Published over 100 scientific articles and edited three books

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