

Reservoir Engineering

The case study material covered in this course has been chosen to illustrate the application of reservoir engineering tools and techniques in a development planning and reservoir management context.

The course draws out the key interfaces between reservoir engineering and geoscience disciplines. Worked examples show the use of data and techniques employed during the construction and maintenance of a reservoir model. Separate examples are used for gas field reservoir engineering and well testing. This process will follow specific phases of:

- building a static reservoir model
- fluid characterisation
- developing a dynamic model
- reservoir management during the producing life of a field

The reservoir engineering course makes significant use of an offshore case study with a sizeable oil reservoir.

COURSE CONTENT

The course content is organised around the following:

The Static Reservoir Model

- Reservoir zonation; Defining fluid contacts; RFT pressure measurements and Pressure vs Depth relationships; Capillary pressures and saturation-height relationships

Fluid Properties

- Fluid sampling; Analysis of fluid samples; Chemical properties of hydrocarbons; Physical properties of hydrocarbons; Making use of the PVT report

Developing the Dynamic Reservoir Model

- Fluid displacement; Dynamic well performance; Upscaling from the core scale; Reservoir simulation

Reservoir Management

- Reservoir monitoring; Production forecasting; History matching in reservoir simulation; Enhanced Oil Recovery techniques

Well Test Analysis

- Uses of well testing; Planning a well test; Well testing operations; Well test analysis; Analysis principles; Analysis techniques; Special test types

Duration

Full day 3 to 5 days

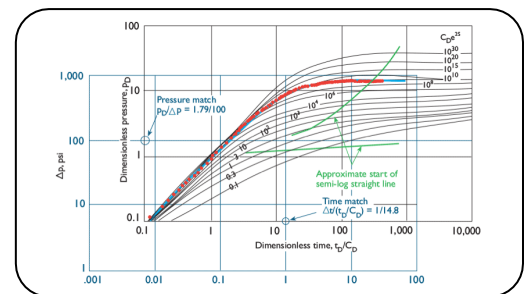
Duration is 3 or 5 days depending on the level of teaching requirement

Learning Level

Skills ●●○
Knowledge ●●○
Awareness ●●●

Designed for:

This course is designed for basic to intermediate reservoir engineers (0-5 years) and is also of benefit to geoscientists and other disciplines which interface with reservoir engineers in their daily work.



Course Tutors



Mark Cook BSc, MBA - 40+ years - reservoir engineering, economics and risk analysis.

Mark develops and runs courses in Early Development, Business & Risk and Reservoir Engineering series. He has a career background at Shell, TRACS (Director), and AGR (VP). Mark is Author of 'Petroleum Economics and Risk Analysis' and co-author of 'Hydrocarbon Exploration and Production', an SPE distinguished lecturer, and guest lecturer at Heriot-Watt University.



Richard Oxlade MEng, CEng, BSc 40+ years - reservoir engineering and commercial

Richard runs courses in Reservoir and Business & Risk series. He has a career background at BP, AGR and TRACS. Richard is a global advisor, business planning & economic analysis.



Jerry Hadwin BSc, MEng

35+ years - reservoir engineering
Jerry mainly tutors courses in the Reservoir, Early Development, and Open Air Series. He has a career background at Shell, TRACS and AGR. Jerry is co-author of 'Adventure Trekking in Oman'.

