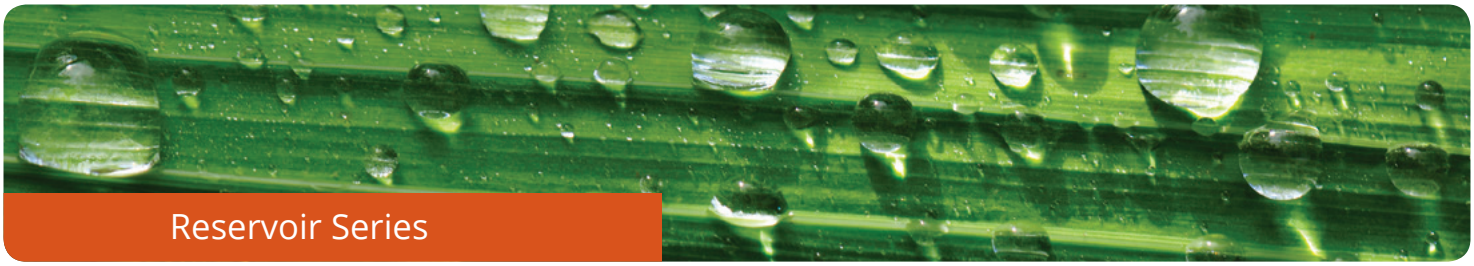


Reservoir Series

Basin Analysis

Designed for:
This course is designed for basic to intermediate level geologists and is also of benefit to geoscientists in general and other disciplines working within Exploration, such as geophysics.

Duration
(days)
1 2 3 4

Learning Level:
Skills
Knowledge
Awareness

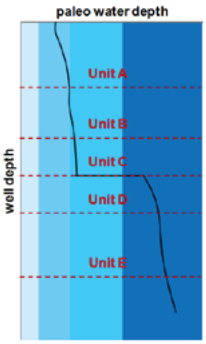
This course explores how to evaluate the potential of a sedimentary basin, describing the basin history and the resulting petroleum potential. Basin modelling methods will be reviewed and the course culminates with a hands-on case study, selected to illustrate the application of basin analysis techniques to the understanding of petroleum systems and the development of play concepts.

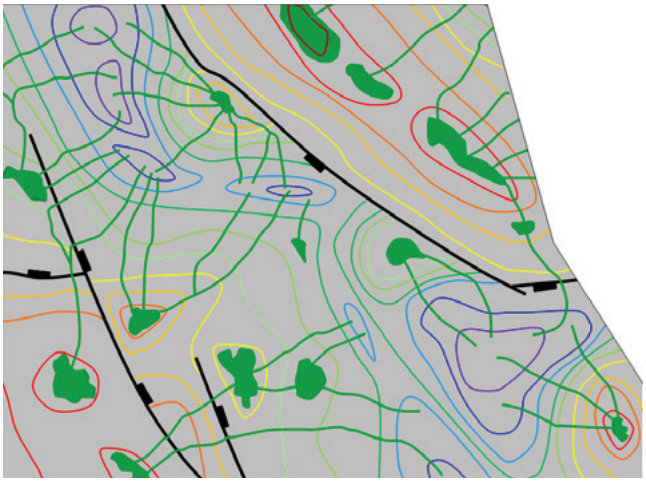
Successful basin analysis requires the integration of a number of technical disciplines, notably tectonics, stratigraphy, sedimentology and geochemistry.

The course will start with an overview of basin types and basin formation after which the key concepts of thermal history and subsidence will be introduced. Participants will identify data types and evaluation techniques that could assist in the evaluation of the basin's history. This data will then be used to build a picture of the sedimentary fill and tectonic history using a combination of seismic cross sections, well log data and core. Paleogeographic indicators will be introduced using outcrop images and well data. Participants will bring these elements together in a chronostratigraphic diagram of the basin and at this stage the play concept will become live and some of the key elements of the petroleum system can be identified.

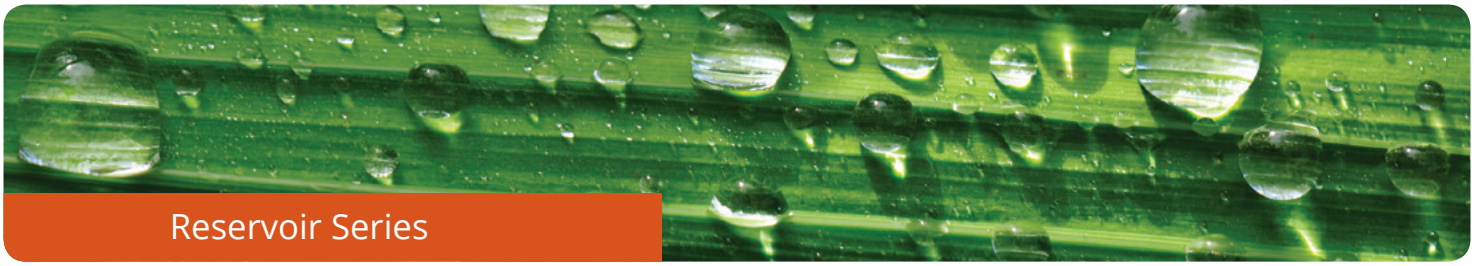
The course will then move on to the charge history of the basin and the fundamentals of hydrocarbon generation and migration will be set out referencing a burial depth curve. Participants will start to see their picture of the basin transformed into a full basin model with source kitchens, migration routes and potential traps mapped out.

On the final day the elements of basin analysis will be brought together in a case study to perform prospect evaluation, portfolio analysis and play risking.





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



Reservoir Series

Basin Analysis continued

Course Content:

Foundations
- definition
- basin types
- basin formation processes
- overview of data and techniques used in basin analysis

Geo-history analysis
- sequence stratigraphic framework
- the tectonic history of a basin
- the chronostratigraphic diagram
- paleogeographic reconstruction
- the play concept

Basin modelling
- hydrocarbon generation and migration
- burial-depth curves
- distribution of source rocks
- charge history

Developing the play concept
- the Petroleum System
- prospect evaluation
- portfolio analysis and risk
- worked case study

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 Duration:

Duration is 4 days

Course Tutor

Liz Chellingsworth BSc, MSc
Main Series tutoring: Introduction to Geophysics, Interpretation Masterclass
Industry experience: 12 years, geoscience
Career background: Hydrosearch, Fugro, Foster Findlay Associates, AGR and TRACS
Personal: Technical paper author, presenter at EAGE

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