



D401: Multi-Disciplinary Skills for Field Development Planning and Approval

Instructor(s): Pete Smith

4 Days

Competence Level:
Skilled



Virtual Course

Summary

This course considers in detail the technical and commercial influences on Field Development Planning within the global oil and gas industry. It considers the need for understanding field developments by resource size, facility choice, development risk, cost and value. This course is tailored to those wishing to deepen their understanding of the multi-discipline skills required for Field Development Planning.

Learning Outcomes

On completion of this course, and after applying the learning's of the course in their job, participants will have built up skilled competence on how to plan a field development and specifically be able to:

1. Establish a detailed understanding of the purpose of Field Development Planning.
2. Deepen knowledge of how risk and uncertainty impacts field development planning decisions.
3. Understand all aspects that appertain to Field Development Planning, including resource size, resource location, reservoir production support mechanism and cost.
4. Be able to assess the impact of field development choices on facility selection, sizing and costing.
5. Build a holistic view of the commercial worth of Field Developments.
6. Develop a set of key tools to make optimum decisions based upon available information and uncertainties
7. Develop a comprehensive understanding of how a field development project is managed through keystone gates.
8. Manage Field Development cost, schedule and operability through-out field life.

Duration and Training Method

There are two parts to this course:

1. Pre-course materials - 4 standalone modules completed prior to the course.
2. A virtual classroom divided into 8 three to three and a half hour webinar sessions (equivalent to a four-day classroom course), comprising lectures, discussion, case studies, and practical exercises to be completed by participants during and between sessions.

Who Should Attend

The course is designed for reservoir/petroleum/production/facility/drilling engineers, geoscientists, team leaders and managers.

Prerequisites and Linking Courses

Whilst there are no formal prerequisites for this class, participants are expected to have a basic understanding of statistics and able to use excel to complete individual exercises.

There are a selection of courses that relate to this through the study of field development including N412 (A Critical Guide to Reservoir Appraisal), N995 (Managing Uncertainty and Risk in Appraisal and



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Course Content

A. Pre-course materials to complete as a primer for the course:

1. Value - Measures of project value – Strategic fit, Net Present Value and Rate of Return, etc.
2. Making Decisions - Use of Decision trees/link between studies and decisions
3. Statistics and distributions – key types and parameters
4. Combining distributions – parametric method

(All these materials/modules have a pre-module quiz to check existing understanding and a post-module exercise to secure learning).

B. Virtual Course Webinars

Webinar 1 - Introduction

- Heuristics Quiz
- Introduction
- Business Framework
- Risk and Uncertainty
- Review of pre-course materials 1 & 2 and solution to exercises

Webinar 2 - Estimating Resources

- Quiz and review of webinar 1
- Fluids and PVT data
- Reservoir Mechanisms
- Secondary and Tertiary Recovery
- Resource Uncertainty

Webinar 3 - Estimating Costs part I

- Quiz and review of webinar 2
- Field Development Definition
- Well Productivity
- Oil/Water and Gas Profiles

Webinar 4- Estimating Costs part II

- Quiz and review of webinar 3
- Secondary Recovery
- Additional Production Issues
- Facility Selection
- Development Costs



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Webinar 5 - Estimating Value part I

- Quiz and review of webinar 4
- Transportation Costs
- Gas fields and Gas Value chain
- Commercial Evaluation & Fiscal regulations

Webinar 6 – Estimating Value part II

- Quiz and review of webinar 5
- Field Development Examples:
 - I. Onshore
 - II. UKCS
 - III. Atlantic Margin - deep-water
 - IV. Norway
 - V. Gulf of Mexico – shelf and deep-water

Webinar 7 – Framing choices

- Quiz and review of webinar 6
- Review of pre-course materials 3 & 4 and solution to exercises
- Probability Estimation
- Value of Information (Appraisal & Intervention)
- Bayesian Revision
- Project Uncertainty

Webinar 8 - A Compelling Case

- Quiz and review of webinar 7
- Reservoir Dynamic Modelling
- Production forecasting
- Field Development Project Planning
- Presenting the project
- Wrap-up