



N680: Multi-Disciplinary Skills for Sustainable Field Development Planning for Hydrocarbon and CCS Projects

Instructor(s): Pete Smith

Format and Duration

Classroom - 3 Days
Virtual - 5 Sessions

Summary

This course considers the technical and commercial influences on Sustainable 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, as well as the environmental implications of the development. It includes a consideration of carbon capture and storage in the planning process. The course is tailored to those wishing to deepen their understanding of the multi-discipline skills required for Field Development Planning.

Learning Outcomes

Participants will learn to:

1. Establish a detailed understanding of the purpose of Field Development Planning.
2. Deepen knowledge of how risk and uncertainty impact 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 key stage gates.
8. Include environmental aspects into the business case.
9. Manage Field Development cost, schedule and operability through-out field life.
10. Build a compelling development case satisfying cost, value and sustainability objectives.

Training Method

This is a classroom or virtual classroom course comprising a mixture of lectures, data examples, case studies, and practical exercises.

Who Should Attend

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

Course Content

Session 1 - Estimating Resources

- The concept of Value

N680: Multi-Disciplinary Skills for Sustainable Field Development Planning for Hydrocarbon and CCS Projects

Instructor(s): Pete Smith

Format and Duration

Classroom - 3 Days

Virtual - 5 Sessions

- Geological issues - defining the static reservoir model
- Hydrocarbon issues - "The Fluids"
- Petro-physical Properties
- Reservoir Mechanisms
- Reservoir Dynamic Modelling
- Resource Uncertainty

Session 2 - Estimating Costs

- Field Development Definition
- Well Productivity
- Oil/Gas/Water Profiles
- Secondary Recovery
- Well Test Analysis
- Developing a drilling schedule
- Facility Costs

Session 3 - Estimating Value

- Transportation costs
- Gas and Gas Condensate fields
- Commercial Evaluation/Fiscal Regulations
- Onshore Oil Field Development Example
- Offshore and Deepwater Oil Field Development Examples
- Gas Value Chain

Session 4 - Making decisions

- Risk, Uncertainty and Making Decisions
- Bayesian Revision - Value of additional data.
- Probability Estimation
- Correlations and dependent variables
- The value of Information
- The value of intervention
- Production Forecasting and Surveillance

Session 5 - Project, Environmental and Risk Planning

- Field Development Project Planning
- Carbon Capture and Storage
- Practical screening for CO₂ storage. with and without CO₂ EOR
- Life cycle CO₂ footprint (CO₂ generated minus CO₂ stored)



N680: Multi-Disciplinary Skills for Sustainable Field Development Planning for Hydrocarbon and CCS Projects

Instructor(s): Pete Smith

Format and Duration

Classroom - 3 Days

Virtual - 5 Sessions

-
- Well, Reservoir and Field Management
 - Roles & Responsibilities
 - Field Development Risk Planning
 - Review of the course – last questions and close-out