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jh

This may also be of interest

Well Reservoir Facility  
Management

Management

Basic Reservoir  
Engineering

Engineering

Petroleum Economics  
and Contracts in E&P

Contracts in E&P

## Description

This training present a comprehensive description of the activities to design, present and implement oil and gas field development plans, describing the different stages from exploration, discovery, appraisal, development and construction, with emphasis in the importance of understanding the reservoir and wells production potential, the influence of the reservoir architecture in the number and location of the producer wells, the production and exporting facilities for different scenarios; how to select the best development scenario based on driving mechanisms and recoveries for various development options, economic studies, environment, safety, risks, uncertainties, government regulations and market conditions.

The importance of defining and evaluating drilling strategies as key drivers to minimize the project risks, considering different scenarios available for the production facilities to develop a hydrocarbon discovery, costs implications for onshore and offshore including subsea options. How to prepare the documents for project sanction and implementation, field study cases and practical exercises are included in this training, highlighting data management and multidiscipline integration.

## Objectives

- Describe the principles and fundamental parameters needed to quantify and to evaluate hydrocarbon resources for successful field development
- Transfer experiences acquired in preparation of successful field development plans in different environments, different scenarios and different countries
- Illustrate the need for accurate lifecycle cost estimations for oil and gas field developments, identification and appreciation of the key project drivers
- Describe the role of various disciplines and critical aspects that will have an impact in the outcome of the development plan
- Identify areas to maximize the project value, identify and quantify risks, and definition of mitigation actions
- Understand the procedures involved in the preparation and implementation of optimal field development plans, considering options and implications for different stakeholders as National oil companies, investors and regulators
- Learn how to prepare and document field development plans.

## Audience

Professionals within the industry who have an interest in developing oil and gas field projects such as:

- Exploration geoscientists,
- Reservoir engineers,
- Petroleum engineers,
- Drilling and completion engineers,
- Process and facilities engineers,
- Commercial and finance professionals and projects managers.

This training can be done in house based on work-shop sessions for groups of delegates with interest in Field Development plan principles and practices; it can be tailored to specific company needs.



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## Content

### Day 1

#### Introduction, concepts & objectives

- Life cycle of an oil and gas project. Industry trends on maturing oil and gas projects
- Hydrocarbon accumulations overview, exploration and development techniques, role of exploration and development disciplines, Geophysical methods, seismic, gravity, and magnetics, Wild-Cat drilling, geological studies
- Decisions to explore, test and development. Project identification and Feasibility.
- Field development definitions and concept. Integrated field development concept and challenges.
- Field Development preliminary exercise

### Day 2

#### Evaluation of Discovered Reservoirs

- Evaluating a discovered oil and gas field. Key data collection during exploration.
- Estimating hydrocarbons in place, recoverable volumes & recovery mechanisms.
- Field development definition/concept. Integrated field development concept and challenges.
- Insights for commerciality of a hydrocarbon resource discovery.
- Field performance and management, data management and interpretations.
- Criteria influencing exploration, development, and production reservoir life
- Insights for commerciality of a hydrocarbon resource discovery.
- Field performance and management process. Data management and Interpretation
- Criteria and strategies influencing in exploration, development, and production reservoir life.
- Field Development Plan example study case 1.

### Day 3

#### Development Options

- Evaluating the different development options. key drivers for a successful development.
- Identifying project risks & reservoir uncertainties
- Subsurface evaluation, the reservoir static and dynamic model. Reservoir characterization. Fluid characterization/PVT.
- Role of simulation in field development. Reservoir Static & Dynamic model construction, calibration and history matching for reservoir performance evaluation and predictions.
- Defining and preparation production forecasts.
- Wells and completion requirements and identification of optimization options
- Field Development Plan example study case 2
- Gates concept in the field developments commonly used in the oil industry: Identify, Assess, Select, Define, Execute & Operate.



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### Day 4

#### Production Optimization, Cost Estimations and Economics

- Preliminary cost estimations, estimating development costs, preliminary economics.
- Factors affecting oil recovery processes in subsurface and surface technologies, pumps, facilities & exporting options.
- Production optimization and engineering, wells, production facilities, exporting options.
- Requirements for project sanction. Reservoir management plan. Environment impact assessment (EIA). Risk analysis and project schedule.
- Additional data requirements (appraisal wells, production tests, etc.). Integrity problems review and diagnostic.
- Reservoir surveillance. Data analysis and Technologies to Improve oil recovery in field development Stages.
- Oil Recovery methods: primary, secondary & tertiary recovery. Flooding patterns considerations. Enhanced oil recovery concepts screening criteria fundamentals.
- Field Development Exercise 2

### Day 5

#### Field development Master Development Plan

- Field development study cases. Master Development Plan concept.
- Field development example 1: Conventional reservoirs development, Wells Location, Engineering Designs, Surface Facilities Designs.
- Field development example 2: Heavy oil reservoir from Exploration, Development, Enhanced Oil Recovery Technologies (Thermal, Gas, and Chemical Flooding Designs and Scenarios), Production facilities Layouts.
- Field Development Team Exercise.

End of the Training