

UNCONVENTIONAL RESERVOIRS

RSE037

COURSE OVERVIEW

This course will cover wide range of knowledge in Unconventional Resources addressing physics behind, screening criteria, applications, development strategy. Unconventional Resources are now well-focused due to scarcity of easy oil. It needs special technology and analysis to study, evaluate, appraiser and develop.

The course starts with an overview about different types of unconventional resources. PRMS concepts and definitions will be covered throughout before going deep into tight rocks development and heavy oil reservoir addressing all of its related aspects whether in appraisal or development stage. Different key elements will be addressed for each relevant resource.

The course will then start to present reservoir engineering fundamentals covering briefly pressure transient analysis consideration, stimulation techniques and decline curve analysis. In addition to presenting different case studies in Egypt, and commercial aspects.

COURSE OBJECTIVES

By the end of this course, participant will be able to:

- Understand the different types of unconventional resources and their evaluation methods.
- Apply PRMS concepts for reserve estimation and commercial assessment of unconventional resources.
- Analyze geological and petrophysical aspects of unconventional reservoirs.
- Develop strategies for drilling, completion, and production in tight reservoirs.
- Identify key challenges and solutions for heavy oil and extra heavy oil reservoirs.
- Utilize stimulation techniques such as acidizing and hydraulic fracturing.
- Perform pressure transient analysis and decline curve analysis for unconventional reservoirs.
- Implement surveillance strategies for monitoring unconventional reservoir performance.
- Analyze case studies and apply economic indicators for commercial evaluation of unconventional resources.
- Gain insights into new technologies and their applications in unconventional resource development.

WHO SHOULD ATTEND

- Reservoir Engineers
- Petroleum Engineers
- Development Geologist
- Field Engineers

COURSE DURATION

5 Working Days

COURSE OUTLINES

Pre course evaluation

PART I:

Overview of Tight reservoirs as unconventional resource

In this part, an overview about unconventional resources will be illustrated highlighting methods and workflow used to assess. Basics of geological aspects and evaluation will be presented. In addition to conceptual considerations while drilling and completion.

This part will address and detail the following topics:

- Methods and important parameters in evaluating tight reservoirs
- Resources prospecting and ranging
- Integrated evaluation
- Considerations in drilling and completion of tight reservoirs
- Production aspects in tight reservoir

PART II

Unconventional Resources Classification and Assessment, and Geochemistry Aspects and Petrophysical Aspects

In this part, PRMS system will be overviewed shedding light on different kind of unconventional resources. This is important especially for reservoir engineers and individuals interested in reserve estimation and commercial aspects. Basics of Geochemical and petrophysical aspects are going to be addressed as well.

In this part, the following topics will be discussed:

- Petroleum Resources Management System (PRMS)
- Reserves definitions, classifications and categorization
- Project-based classification
- In-Place estimation methods; deterministic and stochastic
- Organic Matter and TOC
- Measures of Sweet Spots
- Petrophysics aspects

PART III

Heavy oil and Extra Heavy Oil Reservoirs

In this part, basic concepts of heavy types and definitions are going to be elaborated. In addition to key challenges in such resources

Following are the main topics will be covered in this part:

- Definitions and properties
- Water management
- EOR applications in developing such unconventional resource
- Tar mats
- SARA analysis
- How to develop heavy oil reservoir?

PART IV

Stimulation treatment, and Reservoir Engineering Tools

In this part, the following will be addressed:

- When to acid and when to frack?
- Basics of hydraulic fracturing and acidizing
- Pressure Transient Analysis for tight rocks
- Rate estimation and uncertainty analysis
- Decline curve analysis for unconventional
- Surveillance Strategy

PART V

Case studies, New Technology and Commercial Evaluation Overview

In this part, different case studies will be presented. Different economical indicators will be explained with hands on application.

Following are the main topics will be covered in this part:

- Case Studies
- Role of MEOR to develop Extra Heavy Oil case study
- Commercial Evaluation concept and workshop

Post course evaluation

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