MERCURY

Enhanced Oil Recovery (EOR) Course

25 – 29 January 2027
London (UK)



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Ref: 15282_1081268 **Date:** 25 – 29 January 2027 **Location:** London (UK) **Fees:** 5900 Euro

Introduction:

Enhanced Oil Recovery EOR is an essential phase in the life of an oil field. EOR, or tertiary recovery, describes the advanced techniques employed when primary and secondary recovery methods have ceased to be productive. The aim of EOR is to retrieve the remaining crude oil within a reservoir that would otherwise be inaccessible.

EOR capitalizes on the fact that a significant amount of oil remains even after applying primary and secondary recovery techniques. Typically, EOR can recover 30% to 60% or more of a reservoir's oil content, substantially higher than the 20% to 40% extraction rates from primary and secondary methods.

According to the US Department of Energy, enhanced oil recovery is facilitated through one of three primary strategies: thermal injection, gas injection, or chemical injection. Moreover, the realm of EOR is continually evolving, with more speculative and advanced methods grouped under the category of quaternary recovery.

What is Enhanced Oil Recovery?

Enhanced Oil Recovery EOR is a critical aspect of the petroleum industry. It allows for the extraction of oil remaining in reservoirs after exhausting primary and secondary recovery methods. It will cover the foundational concepts of EIP and the importance of EOR in maximizing oil production.

Targeted Groups:

- Reservoir engineers.
- Production engineers.
- Petroleum engineers.
- Petro physicists.
- Geologists.
- Geoscientists.
- This enhanced oil recovery EOR course is for whoever is interested in enhanced oil processes.

Course Objectives:

At the end of this enhanced oil recovery EOR course, the participants will be able to:

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- Different classifications and mechanisms of different EOR methods.
- How do you screen actual field cases to select the suitable EOR method?
- Different types and sub-types of current and advanced EOR processes.
- Maximization of oil recovery using Mobility Ratio M and Capillary Number Nc.
- New EOR techniques include MEOR, enzyme, seismic, electric, EM-EOR, and chemical-thermal hybrid methods.

Targeted Competencies:

By the end of this enhanced oil recovery EOR training, the participant's competencies will:

- Understand different EOR techniques thermal, chemical, and miscible gas injection.
- Analyze reservoir conditions to select appropriate EOR methods.
- Design and implementing EOR projects effectively.
- Evaluate economic feasibility and risk assessment of EOR projects.
- Optimize production and extend reservoir life through EOR.
- Integrate EOR strategies with existing field operations.
- Apply regulatory and environmental considerations to EOR projects.

Course Content:

Unit 1: Oil formation theory:

- Reservoir rock
- Cover rock.
- Mother rock.
- Trap concept and types.
- Production system elements.
- Reservoir properties.
- Oil and gas properties.
- Primary, secondary and tertiary production techniques.

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Unit 2: EOR:

- EOR definition.
- Generic EOR workflow.
- Main EOR types and related recovery mechanisms.
- EOR concepts.
- EOR limitations and challenges.
- EOR selection.
- EOR screening criteria for all EOR types.
- Class exercises illustrating EOR screening for candidate fields.
- Fundamental science and engineering behind EOR applications.
- Learn the definition, generic workflow, recovery mechanisms, general concepts, limitations and challenges of commercial EOR types and their screening criteria, which have been developed over time.
- Exercises on EOR screening for candidate fields.
- Discuss the fundamental science and engineering behind EOR applications.

Unit 3: EOR Processes:

- Fundamental of Chemical EOR.
- Fundamental of miscible EOR.
- Fundamentals of thermal EOR and newly developed thermal Methods.
- Different types and sub-types of current and advanced EOR processes.
- Maximization of oil recovery using Mobility Ratio M and Capillary Number Nc.
- Fundamentals Chemical, Miscible and Thermal EOR processes.
- Case studies on newly developed thermal EOR will be covered as well.

Unit 4: New EOR techniques:

- MEOR method.
- Enzyme method.
- Seismic method.
- Electric method.
- EM-EOR method.
- Chemical-thermal hybrid method.

Unit 5: Current and advanced thermal EOR processes:

- Thermal processes: cyclic and continuous steam injection.
- Steam-assisted-gravity-drainage SAGD.
- In-situ combustion methods: forward and backward.
- Toe-to-Heel air injection THAI and CAPRI processes.
- Steam CO2 hybrid EOR technique and field application.