

Best Practices of Enhanced Oil Recovery (EOR) Projects

Date

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22 December -26
December 2024

Kuala Lumpur

3500

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Why Choose this Training Course?

The increasing gap between discovering giant oil fields and world oil demand creates very good opportunity for more applications of enhanced oil techniques in mature oil fields. This course teaches an integrated approach of water flooding and enhanced oil recovery (EOR), It explains the connection of each process to the reservoir principles to the results of cases from the field and covers the specifics of chemical, miscible and thermal EOR processes.

The course is designed to provide attendants with solid understanding of different design aspects, types, screening criteria, and field application of current and advanced types of Enhanced oil Recovery (EOR) processes. Today, it is better to apply EOR in a secondary mode. This course presents basics, applications, problems, uncertainties and field development of each EOR method. Reservoir characterization techniques required for EOR will be explained and compared. Detailed EOR methods will be covered with many actual field cases worldwide will be presented and discussed. The course is designed as an interactive learning environment of lecturing, industry videos, and screening field cases.

This course will feature:

- Rock and fluid properties for better reservoir characterization
- How to screen actual reservoir to select the suitable EOR method
- Different types, sub-types, and results of EOR field cases (chemical, miscible, and thermal)
- Required data, lab design approach, and analysis of different EOR methods
- Current industry simulators and new advancements of EOR methods

What are the Goals?

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

- Describe and apply different EOR processes
- Reservoir characterization and screening actual fields for EOR methods
- How to maximize oil recovery using Mobility Ratio and Capillary Number
- Chemical EOR: polymer, alkaline-polymer, and alkaline/surfactant/polymer
- Miscible and thermal EOR techniques and new advancements in EOR techniques

Who is this Training Course for?

This course is suitable to a wide range of professionals but will greatly benefit:

- Petroleum, Production & Reservoir Engineers
- Processing engineers & other discipline engineers
- Geologists & Petro physicists
- Engineers who are new to the profession
- Other individuals who need to know about EOR technologies

How will this Training Course be Presented?

This course will utilise a variety of proven adult learning techniques to ensure maximum understanding, comprehension and retention of the information presented. The course is designed as a blended environment of presentation, class exercises, field application/analysis and several industry videos showing all processes.

The Course Content

Day One: Different EOR Processes and Screening Criteria

- Different enhanced oil recovery (EOR) methods.
- Reservoir concepts, RCAL, SCAL and fluid properties for EOR
- Screening criteria and mechanisms of different EOR methods.
- How to maximize oil recovery using mobility ratio and capillary number
- Limitations, challenges, uncertainties and problems of different EOR methods

Day Two: Reservoir Fluid Properties and Reservoir Characterization

- Reservoir concepts, main rock and fluid properties for EOR
 - Routine and Special Core Analysis (RCAL & SCAL)
 - Five different reservoir fluids and downhole sampling tools
- Detailed reservoir fluid study (five tests)
- Different tools for downhole fluid sampling
- Advanced reservoir characterization techniques for EOR methods

Day Three: Water flooding and Different Chemical EOR Processes

- Water flooding: design requirement, frontal displacement theory
- Classification and screening of different chemical EOR methods;
- Polymer flooding: polymer types, properties, and degradation
- Alkaline/polymer (AP) and ASP flooding: process and limitations
- Three actual field results: Daqing (China), Kentucky (USA), Norne Field (Norway)

Day Four: Miscible and Immiscible EOR processes

- Miscible gas EOR: CO₂ and Nitrogen injection methods;
- Determination of minimum miscibility pressure (MMP).
- Carbon dioxide miscible and immiscible flooding processes.
- Carbon dioxide field selection and screening application

- Current industry simulators for CO2 process

Day Five: Thermal and ther EOR processes

- Thermal processes; cyclic and continuous steam injection.
- Industry simulators for steam EOR methods
- Steam-Assisted-Gravity-Drainage (SAGD)
- In- situ combustion method: wet and dry applications
- Toe-to-Heel Air Injection (THAI) and CAPRI processes
- Microbial EOR, Enzyme EOR, and Low Salinity Water (LSW)



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