Training Course on Enhanced Oil Recovery (EOR) Technologies

Professional Development Training Course Outline

Category	Oil and Gas	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

The global energy landscape is evolving, and the demand for sustainable and efficient oil extraction technologies has never been greater. Enhanced Oil Recovery (EOR) technologies represent a critical innovation in maximizing hydrocarbon extraction from mature oil fields. This intensive training course explores the cutting-edge advancements in thermal, gas, and chemical EOR methods, supported by real-world case studies from major oil-producing regions. Participants will gain deep insights into reservoir behavior, fluid dynamics, economic evaluations, and emerging innovations like nanotechnology and AI integration in EOR.

Training Course on Enhanced Oil Recovery (EOR) Technologies equips petroleum engineers, reservoir specialists, geoscientists, and industry professionals with the strategic, technical, and analytical skills necessary to enhance oil recovery and optimize well productivity. With a curriculum focused on industry-leading practices and the latest research, this course is designed to position professionals at the forefront of reservoir management and production optimization.

Programme Curriculum

Training Course on Enhanced Oil Recovery (EOR) Technologies

Introduction

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Course Objectives

1. Understand advanced enhanced oil recovery techniques and their global applications.
2. Analyze reservoir simulation models to evaluate EOR performance.
3. Evaluate CO? injection processes and their impact on oil displacement.
4. Examine the application of polymer flooding in various reservoir conditions.
5. Study thermal recovery methods including steam injection and in-situ combustion.
6. Apply chemical EOR methods in sandstone and carbonate formations.
7. Integrate AI and machine learning tools in EOR decision-making.
8. Assess the economic viability and ROI of EOR projects.
9. Design field-specific EOR project workflows using real-time data analytics.
10. Explore nanotechnology applications in EOR to boost recovery efficiency.
11. Implement sustainable and environmentally friendly EOR practices.
12. Interpret field case studies from mature fields and unconventional reservoirs.
13. Develop cross-functional EOR implementation strategies in integrated teams.

Target Audiences

1. Petroleum Engineers
2. Reservoir Engineers
3. Geoscientists
4. EOR Project Managers
5. Production Engineers
6. R&D Professionals in Energy
7. Environmental and Sustainability Officers
8. Oil & Gas Investors and Strategists

Course Duration: 10 days

Course Modules

Module 1: Introduction to Enhanced Oil Recovery (EOR)

- Definition and importance of EOR
- Types and classification of EOR methods
- History and evolution of EOR
- Factors influencing EOR selection
- Global trends in EOR application
- **Case Study**: Overview of EOR strategy in California oilfields

Module 2: Reservoir Characterization for EOR

- Petrophysical properties evaluation
- Reservoir heterogeneity and behavior
- Core analysis and well logging
- PVT analysis and fluid compatibility
- Simulation models for EOR planning
- **Case Study**: Reservoir characterization in Permian Basin

Module 3: Thermal Recovery Methods

- Steam flooding principles
- In-situ combustion technology
- Heat transfer mechanisms in reservoirs
- Thermal simulation and monitoring
- Challenges in thermal recovery
- **Case Study**: Steam-assisted gravity drainage (SAGD) in Alberta

Module 4: Gas Injection EOR

- CO? injection fundamentals
- Nitrogen and hydrocarbon gas injection
- Minimum miscibility pressure (MMP)
- Gas behavior in porous media
- Compression and recycling techniques
- **Case Study**: CO? injection in Weyburn-Midale field

Module 5: Chemical EOR Techniques

- Surfactants and polymers in EOR
- Alkaline-surfactant-polymer (ASP) flooding
- Wettability alteration mechanisms
- Chemical retention and degradation
- Compatibility with reservoir rock and fluids
- **Case Study**: ASP flooding in Daqing Oilfield, China

Module 6: Polymer Flooding and Gel Technologies

- Mechanism of mobility control
- Polymer selection and performance
- Gel flooding for conformance control
- Injection strategies and timing
- Monitoring and troubleshooting
- **Case Study**: Polymer injection success in Mangala field, India

Module 7: CO? EOR – Design and Operations

- Design criteria for CO? floods
- Injection and recycling facilities
- Safety and corrosion control
- Monitoring CO? migration
- Sequestration and sustainability benefits
- **Case Study**: CO?-EOR in the Permian Basin

Module 8: EOR Simulation and Modeling

- Simulation software overview
- History matching and forecasting
- Sensitivity analysis techniques
- Integrating lab and field data
- Predictive performance metrics
- **Case Study**: Reservoir modeling in North Sea fields

Module 9: Environmental and Economic Aspects of EOR

- Cost-benefit analysis tools

- Environmental impact assessments
- Carbon credits and emissions reductions
- Lifecycle analysis of EOR projects
- Regulations and compliance
- **Case Study**: Sustainability report of Petrobras EOR projects

Module 10: AI and Machine Learning in EOR

- Data-driven EOR design
- Predictive analytics in reservoir behavior
- Pattern recognition and neural networks
- AI tools for real-time monitoring
- Big data integration in oilfield operations
- **Case Study**: Predictive EOR modeling in Abu Dhabi

Module 11: EOR in Carbonate Reservoirs

- Challenges of low permeability
- Fluid-rock interactions
- EOR fluid compatibility
- Enhanced wettability techniques
- Acidizing and surfactant flooding
- **Case Study**: Surfactant flooding in the Middle East

Module 12: EOR in Unconventional Resources

- Hydraulic fracturing and EOR
- Nanofluids and surfactant foams
- Challenges in shale formations
- Enhanced permeability mechanisms
- Water-alternating gas (WAG) methods
- **Case Study**: Nanotechnology-assisted EOR in Bakken Formation

Module 13: Field Development Planning and Risk Management

- Integrated field development models
- Uncertainty and risk assessment
- Production forecasting
- Decision trees and probabilistic models
- Economic feasibility assessment
- **Case Study**: Strategic EOR planning in the South China Sea

Module 14: Monitoring and Optimization of EOR Projects

- Production data acquisition systems
- 4D seismic and fiber optic monitoring
- Tracer tests and diagnostics
- Optimization algorithms
- Decline curve analysis
- **Case Study**: Real-time optimization in the Gulf of Mexico

Module 15: Future Innovations in EOR Technologies

- Bio-EOR and microbial methods
- Smart fluids and responsive polymers
- Solar-powered thermal recovery

- AI-integrated control systems
- Industry 4.0 and digital oilfields
- **Case Study**: AI and green energy synergy in Kuwait Oil Company

Training Methodology

- Interactive live lectures and expert presentations
- Real-world case studies and group discussions
- Hands-on exercises using EOR simulation tools
- Pre- and post-course assessment to evaluate learning outcomes
- Access to downloadable course materials, tools, and templates
- Certification of completion with skill badges

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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