



HARNESS THE POWER
OF KNOWLEDGE

Reservoir Engineering for Geosciences

TRAIN



Course Overview:

Reservoir engineering plays a crucial role in the exploration, development, and management of hydrocarbon reservoirs

This comprehensive 5-day professional training course will equip geoscientists with the essential knowledge and skills to effectively apply reservoir engineering principles to subsurface evaluation, reservoir characterization, and production optimization

Course Objectives:

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

1

Understand the fundamental principles of reservoir engineering and their application to subsurface exploration and reservoir management

2

Apply reservoir engineering concepts to evaluate reservoir potential, estimate hydrocarbon reserves, and predict reservoir performance

3

Utilize reservoir simulation tools to model fluid flow and reservoir behavior under different production scenarios

4

Analyze and interpret reservoir data, including well logs, core samples, and production data, to characterize reservoir properties and optimize production strategies

5

Integrate reservoir engineering principles with geoscience data to enhance subsurface understanding and inform reservoir development decisions

Course Agenda:

Day 1: Introduction to Reservoir Engineering

- Explore the history, principles, and importance of reservoir engineering in subsurface exploration and reservoir management
- Understand the relationship between reservoir geology, fluid properties, and reservoir performance
- Discuss the different types of hydrocarbon reservoirs and their characteristics
- Delve into the concepts of porosity, permeability, and saturation in reservoir rocks

Day 2: Reservoir Evaluation and Characterization

- Apply reservoir engineering methods to evaluate reservoir potential, estimate hydrocarbon reserves, and predict reservoir performance
- Utilize well log data, core samples, and seismic data to characterize reservoir properties, such as porosity, permeability, and fluid distribution
- Understand the concept of material balance and its application in reservoir evaluation
- Discuss the importance of reservoir zonation and compartmentalization in reservoir modeling and simulation

Day 3: Fluid Flow in Porous Media

- Explore the fundamental principles governing fluid flow in porous media, including Darcy's law and relative permeabilities
- Understand the effects of rock properties, fluid properties, and pressure gradients on fluid flow behavior
- Analyze flow patterns in different reservoir geometries and production scenarios
- Discuss the application of fluid flow principles in reservoir simulation and well placement optimization

Day 4: Reservoir Simulation

- Delve into the principles and applications of reservoir simulation in reservoir characterization and production optimization
- Utilize reservoir simulation software to model fluid flow, reservoir pressure, and hydrocarbon production

under different scenarios

- Analyze simulation results to evaluate reservoir performance, predict production rates, and optimize well management strategies

- Discuss the limitations and uncertainties associated with reservoir simulation

Day 5: Integration of Reservoir Engineering with Geoscience Data

- Integrate reservoir engineering principles and reservoir simulation results with geoscience data to enhance subsurface understanding and inform reservoir development decisions

- Utilize seismic data, well log data, and geological interpretations to refine reservoir models and improve production forecasts

- Discuss the importance of multidisciplinary collaboration between geoscientists and reservoir engineers in reservoir management

- Explore the future trends and advancements in reservoir engineering, reservoir simulation, and subsurface data integration

Future Trends in Reservoir Engineering and Subsurface Data Integration

- Explore the latest advancements in reservoir simulation, data analysis, and machine learning

- Discuss the potential of artificial intelligence and virtual reality in reservoir characterization and production optimization

- Envision the future of reservoir engineering and its impact on subsurface exploration and resource development

Who Should Attend:

- Geoscientists involved in reservoir characterization, production optimization, and reservoir management

- Reservoir engineers seeking to enhance their understanding of geological data and subsurface interpretation

- Students and professionals interested in pursuing a career in reservoir engineering and subsurface modeling

- Oil and gas professionals from various disciplines seeking to bridge the gap between geology and reservoir engineering

Course Benefits:

- Develop a comprehensive understanding of reservoir engineering principles, applications, and data integration techniques

- Gain hands-on experience in using reservoir simulation software and analyzing reservoir data

- Enhance your ability to apply reservoir engineering principles to optimize reservoir performance, production strategies, and field development plans

- Stay updated on the latest advancements in reservoir engineering, data analytics, and subsurface modeling

- Expand your understanding of the role of geoscience data in reservoir engineering and production optimization

- Network with other geoscientists and reservoir engineers to foster collaboration and knowledge sharing