Oil & Gas Well Production Operations

Course general description:

The program covers the entire spectrum of well production operations, from basic principles to advanced optimization techniques. Participants will learn about wellbore dynamics, production equipment, monitoring systems, artificial lift technologies, and production enhancement methods. Special emphasis is placed on safety, efficiency, and environmental considerations in modern well operations.

Audience:

This course is designed for:

1. Production Engineers and Operations Engineers
2. Field Operators and Production Supervisors
3. Petroleum Engineers transitioning to production roles
4. Well Completion Engineers
5. Maintenance Engineers involved in production operations
6. Technical professionals seeking career advancement in well operations

Course objectives:

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

1. Understand the fundamentals of well production systems and fluid behaviors
2. Evaluate and optimize artificial lift methods
3. Analyze production data and identify optimization opportunities
4. Troubleshoot common production problems
5. Implement best practices in well monitoring and maintenance
6. Apply production safety and environmental protection measures

Course duration:

5 days

Course location:

Cairo-Dubai-Istanbul

Course contents:

Day 1: Fundamentals of Well Production

1. Overview of well construction, reservoir-wellbore interaction, and production system components.
2. Introduction to well performance analysis, production testing, and nodal analysis.
3. Formation damage causes, productivity index calculations, and well stimulation principles.

Day 2: Artificial Lift Systems

1. Design and troubleshooting of gas lift systems, including valves and continuous vs intermittent operations.
2. Electrical Submersible Pump (ESP) components, performance, and maintenance strategies.
3. Rod pump system design, dynamometer analysis, and optimization techniques.

Day 3: Production Optimization

1. Methods for well testing, surveillance, and performance trending.
2. Addressing production chemistry challenges, such as scale, corrosion, and chemical treatments.
3. Techniques for production enhancement, including acidizing, hydraulic fracturing, and acceleration methods.

Day 4: Production Problems & Solutions

1. Troubleshooting common production problems and implementing solutions.

2. Sand control methods and water management strategies to optimize production.
3. Analysis and optimization of production systems for efficiency and cost-effectiveness.

Day 5: Safety & Modern Technologies

1. HSE considerations, environmental compliance, and risk assessment in production operations.
2. Integration of digital technologies, smart wells, AI applications, and future trends in well production.

Methodology:

- 50% lectures & concepts
- 10% Videos
- 15% Case studies
- 15% Exercises
- 10% Discussions

Course code: (TPTR001)