

# **Drilling Fluids Engineer: Fluid Dynamics & Solids Separation**



**DRPT152**

**COURSE TITLE**

**Drilling Fluids Engineer: Fluid Dynamics & Solids Separation**

**COURSE DATE/ VENUE**

**06th - 10th Oct 2025**

**London, UK**

**COURSE REFERENCE**

**DRPT152**

**COURSE DURATION**

**05 Days**

**DISCIPLINE**

**Drilling, Reservoir & Petroleum Training**

**COURSE INTRODUCTION**

Efficient management of drilling fluids and solids control is critical to the success of modern drilling operations. The **"Drilling Fluids Engineer: Fluid Dynamics & Solids Separation"** course is designed to equip engineers and drilling professionals with in-depth knowledge and practical skills required to optimize drilling fluid performance and enhance solids control techniques.

Participants will explore the fundamentals and advanced concepts of drilling fluids, including their physical properties, fluid dynamics behavior within the wellbore, and the design and operation of solids separation systems. Special emphasis is placed on understanding the impact of drilling fluids on wellbore stability, formation integrity, environmental compliance, and overall operational efficiency.

**COURSE OBJECTIVE**

**Upon successful completion of this course, the delegates will be able to:**

- 1. Understand the Fundamentals of Drilling Fluids:**
- 2. Master Fluid Dynamics in Drilling Operations:**
- 3. Apply Solids Control Techniques:**
- 4. Troubleshoot Fluid and Solids-Related Issues:**

5. Enhance Fluid System Design for Complex Drilling Scenarios:
6. Implement Environmental and Safety Best Practices:

## **COURSE AUDIENCE**

- ☐ **Drilling Fluids Engineers:** Professionals responsible for designing and maintaining drilling fluid systems during drilling operations.
- ☐ **Drilling Engineers:** Engineers managing drilling activities who need to optimize drilling fluids for performance and cost-effectiveness.
- ☐ **Wellsite Engineers:** Engineers working on-site who require in-depth knowledge of drilling fluid systems and solids control.
- ☐ **Mud Engineers:** Specialists who monitor and manage drilling fluid properties during the drilling process.

## **COURSE CONTENT**

### **Day 1: Fundamentals of Drilling Fluids**

- Introduction to Drilling Fluids Engineering
- Functions and Importance of Drilling Fluids
- Types of Drilling Fluids: Water-Based, Oil-Based, and Synthetic-Based
- Basic Properties: Density, Viscosity, Gel Strength, and Filtration
- API Standards and Laboratory Testing of Fluids

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### **Day 2: Fluid Dynamics in Drilling Operations**

- Principles of Fluid Flow in Wellbores
- Laminar vs. Turbulent Flow: Concepts and Applications
- Pressure Losses in the Circulating System
- Hydraulic Optimization for Hole Cleaning
- Impact of Fluid Properties on Drilling Performance

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### **Day 3: Solids Control and Separation Techniques**

- Importance of Solids Control in Drilling Operations

- **Mechanical Separation Equipment: Shale Shakers, Hydrocyclones, Centrifuges**
  - **Solids Removal Efficiency and its Impact on Drilling Fluid Cost**
  - **Drilling Waste Management Basics**
  - **Design and Operation of Solids Control Systems**
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#### **Day 4: Advanced Drilling Fluid Systems and Challenges**

- **Non-Conventional Fluid Systems (High-Temperature, HPHT, Deepwater)**
  - **Fluid Loss and Formation Damage Prevention**
  - **Challenges in Solids Control with High-Performance Fluids**
  - **Specialty Additives for Problematic Formations**
  - **Troubleshooting Common Fluid and Solids Problems**
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#### **Day 5: Integration, Monitoring, and Best Practices**

- **Fluid Monitoring and Maintenance Best Practices**
- **Real-Time Data Acquisition for Fluids and Solids Systems**
- **Health, Safety, and Environmental (HSE) Considerations**
- **Economic Evaluation of Drilling Fluids Programs**
- **Future Trends in Drilling Fluids and Solids Separation Technologies**

#### **COURSE CERTIFICATE**

**TRAINIT ACADEMY** will award an internationally recognized certificate(s) for each delegate on completion of training.

#### **COURSE FEES**

£5,750 per Delegate. This rate includes participant's manual, Hand-Outs, lunch, coffee/tea on arrival, morning & afternoon of each day.

#### **COURSE METHODOLOGY**

The training course will be highly participatory and the course leader will present, guide and facilitate learning, using a range of methods including formal presentation, discussions, sector-specific case studies and exercises. Above all, the course leader will

make extensive use of real-life case examples in which he has been personally involved. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Case studies & Practical Exercises
- 10% Role Play
- 10% Videos, Software or Simulators (as applicable) & General Discussions

