

**Course Overview:**

This beginner-level course provides a practical introduction to hydraulic systems, tailored for professionals in the maintenance and engineering sectors. It addresses the essential principles of fluid mechanics and hydraulic system components, emphasizing real-world applications. Participants will develop the skills needed to operate, maintain, and troubleshoot hydraulic systems, enhancing their efficiency and reliability in industrial settings.

**Course Objective:**

- Understand fundamental principles of hydraulic systems and fluid mechanics
- Identify key hydraulic components and interpret basic circuit designs
- Execute routine and preventive maintenance for hydraulic systems
- Diagnose and resolve common hydraulic system issues
- Apply hydraulic knowledge in operational industrial environments

**Course Outline:**

1. Fundamentals of Hydraulics
  - Principles of Fluid Mechanics
  - Hydraulic Power Basics
  - Applications of Hydraulic Systems
2. Hydraulic Components and Circuits
  - Pumps, Motors, and Cylinders
  - Control Valves and Accumulators
  - Design of Hydraulic Circuits
3. Operation of Hydraulic Systems
  - System Startup and Operation
  - Control and Regulation of Systems
  - Safety in System Operation
4. Maintenance of Hydraulic Systems
  - Routine Maintenance Procedures
  - Preventive Maintenance Strategies
  - Common Maintenance Challenges
5. Troubleshooting Hydraulic Systems
  - Diagnosing Common Issues
  - Troubleshooting Techniques
  - Corrective Actions and Repairs
6. Hydraulic Fluids and Contamination Control
  - Types of Hydraulic Fluids
  - Contamination and its Effects
  - Fluid Management and Filtration
7. Hydraulic System Efficiency
  - Energy Efficiency in Systems
  - Sustainable Practices
  - Emerging Technologies in Hydraulics
8. Advancements in Hydraulic Systems
  - New Developments in Hydraulics

**Training Language:**

English/Arabic

**Training Methodology:**

The course combines various teaching methods, including instructor-led presentations, group discussions, case study analyses, and assessments through quizzes and a final exam to engage participants and ensure they understand and retain the material.

**Venue | Date | Fees**

Khobar | 06-07-2025 | 14,375 SAR

Jubail | 28-09-2025 | 17,250 SAR

- Smart Hydraulics and Automation
- Future Trends in Hydraulic Technology

**Who Should Attend:**

- Maintenance Technicians
- Mechanical Engineers
- Technical Staff handling hydraulic systems
- Entry-level professionals interested in hydraulic technology