Centrifugal Pump Calculation and Selection Masterclass

7 – 11 March 2027
Cairo (Egypt)



Centrifugal Pump Calculation and Selection Masterclass

Ref: 322868_217087 **Date:** 7 – 11 March 2027 **Location:** Cairo (Egypt) **Fees:** 4900 GBP

Course Description

This intensive 1-week course provides a comprehensive understanding of centrifugal pump calculations and selection processes. Participants will learn essential pump fundamentals, system analysis techniques, selection criteria, and performance curve interpretation. The course combines theoretical knowledge with practical applications to equip engineers with the skills needed for effective pump sizing and selection.

Learning Objectives

- Understand centrifugal pump principles and system characteristics
- Master pump sizing calculations and system curve development
- Interpret pump performance curves and select optimal pumps
- Analyze NPSH requirements and avoid cavitation issues
- Apply energy efficiency considerations in pump selection
- Gain practical experience through real-world case studies

Course Modules

Day 1: Centrifugal Pump Fundamentals

- Introduction to centrifugal pumps and their applications
- Pump components and operating principles
- Types of centrifugal pumps and their characteristics
- Key pump parameters and terminology

Day 2: System Analysis and Calculations

- Understanding system head and flow requirements
- Calculating static head, friction losses, and total dynamic head
- Developing system curves
- Introduction to pump affinity laws

Day 3: Pump Selection Criteria and Performance Curves

- Interpreting pump performance curves
- Best efficiency point BEP and operating range
- NPSH requirements and cavitation prevention
- Pump selection criteria and considerations



Day 4: Advanced Selection Techniques

- Variable speed pumping systems
- Parallel and series pump operations
- Energy efficiency and life cycle cost analysis
- Pump selection software and tools

Day 5: Practical Applications and Case Studies

- Real-world pump selection scenarios
- Troubleshooting common pump selection issues
- Case studies from various industries
- Best practices for pump selection and system optimization

Practical Wins for Participants

- Ability to accurately size and select centrifugal pumps for various applications
- Skills to optimize pump systems for energy efficiency and cost savings
- Confidence in interpreting pump curves and avoiding common selection pitfalls
- Practical experience in using pump selection software and tools

