BACHUS PUMP COURSE OUTLINE

1. Basic Pump Principles
- How Pumps Work
- Head vs. Pressure
- Pressure Measurement
- Absolute Pressure
- Gauge Pressure
- Vacuum

2. NPSH
- NPSH required
- NPSH available

3. Cavitation
- Vapor Pressure
- Types of Cavitation
- Effects & Prevention

4. Affinity Laws
- The Laws
- Speed & Diameter
- Practical Application

5. Work & Efficiency
- Flow & Head
- Efficiency
- Horsepower

6. Pump Classification
- PD types
- Centrifugal types
- Impellers
- ANSI / API
- Specific Speed
- Suction Specific Speed

7. Pump Curves
- H-Q
- Eff. & BHp
- NPSHr
- Family Curves

8. System Curves
- TDH
- Elevation, Pressure & Losses
- Pumps in Series & Parallel

9. Shaft Deflection
- Interpreting the Evidence
- Maintenance Operation & Design

10. Pump- Motor Alignment
- Types of Misalignment
- Alignment Techniques

11. Bearings
- Types & Services
- Lubrication
- Maintenance & Seals

12. Pump Packing
- Components
- Packing Procedures
- Failure & Leakage

13. Mechanical Seals
- Components
- Single & Double
- Support Systems

14. Seal Failure Analysis
- Causes & Prevention
- Environmental Controls

15. Practical Maintenance
16. Avoiding Wear
17. Pump Piping
- Draining Tanks
- Suction pipe arrangement
- Discharge pipe arrangement