

MLT1/MLA1 Course Outline

Precision Lubrication and Machine Management Strategies

- Traditional Equipment Maintenance Strategies
- Modern, and Future, Maintenance Strategies
- Machine Lubrication Practices for each Strategy
- The Concept of Precision Lubrication
- The Role of Lubrication in Machine Reliability

Applied Tribology: The Science of Precision Lubrication

- Friction, Motion, Lubrication, and Wear
- Surface Interaction Modes – Sliding and Rolling
- Surface Damage: Abrasive, Adhesive, Cavitation, Corrosion
- Lubricants, Lubricant Films and Surface Protection
- Stribeck Curve – Phase Changes

Lubricant Construction

- Lubricant Categories
- Base Oils
- Additives
- Thickeners

Performance Properties

- Oil Performance Criteria
- Grease Performance Criteria
- Loss of Additive Performance

Lubricant Selection Practices

- Bearings
- Gearing and Couplings
- Hydraulics
- Compressors
- Turbines
- Wire Rope, Chain and Miscellaneous
- Combustion Motors

Lubricant Application – Grease

- Dispensing Tools
- Dispensing Metrics – Frequency and Volume
- Automation
- Practice for Maintaining Automatic Systems
- Route Construction, Scheduling and Management

Lubrication Application – Oil

- Dispensing Tools

Lubricant Condition and Contamination Control

- Sump Management: The Heart of Precision Lubrication
- Types of Contaminants
- Contaminant Exclusion
- Contaminant Removal

Lubricant Storage and Handling

- Lubricant Consolidation
- Bulk and Packaged Product Receipt and Storage
- In Plant Handling Management
- Lubricant Handling Tools
- In Plant Handling Management

Introduction to Oil Analysis

- Lubricant Sampling Tools and Methods
- Properties Analysis
- Solid Contaminant Analysis
- Wear Debris Analysis
- Test Slate, Alarms and Limits Development