

ISO 18436-4 CATEGORY II MACHINE LUBRICANT ANALYST (MLA II)

This ICML course covers lubricant fundamentals, including base oils, additives, and synthetic lubricants, along with their roles in machine reliability. Participants learn best practices in oil sampling techniques, procedures, and contamination control for different equipment. The program explores lubricant degradation mechanisms, key oil analysis tests, and result interpretation for effective condition monitoring. It also develops skills in wear analysis, contamination detection, and prepares participants for ICML MLA II certification.

Format

Duration: 28 hours **Schedule:** 4 Day(s) **Delivery:** Classroom

Who should attend

- Maintenance engineers
- Reliability engineers
- Condition monitoring professionals
- Lubricant analysts and lubrication engineers

Objectives

- Develop expertise in the field of lubricant-analysis-based machinery condition monitoring
- Learn about lubricant health monitoring.
- Develop knowledge and skills on lubricant contamination measurement and control.
- Be able to conduct oil analysis tests and gain knowledge in result interpretation.
- Prepare for ICML Level II Machine Lubricant Analyst: MLA II (ISO 18436-4, II) certification exam. The exam and the associated certification are provided by ICML. Baker Hughes can provide a proctored environment for either the paper-based or online exam

*ICML Partner

Duration: 4 days (28 hours) +1 day for the ICML exam

Required Prerequisites

- 24 months of experience
- MLA I certification or grandfathering

Recommended Prerequisites

- 24 months of experience
- MLA I certification or grandfathering

Program Outline

Day 1:

- Role and functions of lubricants
- Base oils: functions & key properties
- Additives: surface-active vs bulk-oil active
- Synthetic lubricants: types & application conditions
- Oil analysis within RCM & CBM

Day 2:

- Objectives of effective oil sampling
- Equipment-specific sampling (gearboxes, engines, hydraulics, circulating systems)
- Sampling methods: non-pressurized & pressurized systems
- Managing sampling interference (cleanliness, flushing, operating conditions)
- Sampling frequency, procedures & sample handling

Day 3:

- Lubricant failure mechanisms: oxidation, thermal degradation, additive depletion
- Effects and causes of lubricant degradation
- Key lubricant tests: viscosity, VI, AN/BN, FTIR, RPVOT, spectroscopy, RULER, MPC, Air release and Foam stability
- Interpreting lubricant condition trends

Day 4:

- Particle, moisture, fuel, glycol, soot & air contamination
- Effects of contamination on machines & lubricants
- Common wear mechanisms
- Wear detection methods (ICP, particle counts)
- Ferrograms, filtergrams & basic wear debris morphology

CERTIFICATION

ICML

ISO Certification

Global Partner: International Council for Machinery Lubrication (ICML)



