LUBETRAIN RESOURCES SDN BHD
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LUBRICATION APPRENTICE TECHNICIAN, LAT

International Council for Machinery Lubrication, ICML

📅 **Course Period :** 3 Consecutive Days

📝 **ICML Exam** : 3rd Day

CERTIFICATION

HRDC CLAIMABLE COURSE

Introduction

The **Lubrication Apprentice Technician (LAT)** is an **entry-level certification** developed by the International Council for Machinery Lubrication (ICML), designed to provide a structured **foundation for technicians** and maintenance personnel involved in basic lubrication activities. This program equips participants with **essential knowledge** of lubricant fundamentals, lubrication practices, proper handling and storage, contamination control awareness, and safe workplace procedures to support effective machinery operation. Upon completion, participants will be able to apply **basic lubrication best practices** confidently, improve reliability performance at the workplace, reduce lubrication-related errors, and establish a strong foundation for progression into advanced ICML certification pathways such as MLT I and MLA I.

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Training Objectives

Upon completion of this course, participants will be able to:

- Understand the basic principles and functions of industrial lubricants
- Identify lubricant types, properties, and common applications in machinery systems
- Apply correct lubrication handling, storage, and housekeeping practices
- Recognize the importance of contamination control and basic cleanliness standards
- Perform lubrication-related tasks safely and in accordance with industry best practices
- Strengthen workplace competency for entry-level lubrication responsibilities
- Build a strong foundation for progression to advanced ICML certification pathways (MLT / MLA)

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Course Outline 1

1. Lubrication Theory

Why machines need lubrication

i. Machine types (E.g., Gearbox, pump, hydraulics)

ii. Bearing construction

- Open, shielded, and sealed
- Roller types
- Plain bearings

Understand functions of lubricants

i. Reduce friction between moving parts

ii. Dissipate heat generated by friction

iii. Minimize wear and extend component life

iv. Seal out contaminants and moisture

v. Prevent rust and corrosion

vi. Power transmission

Viscosity

i. Requirement changes based on speed, load, and temperature

ii. Importance of viscosity index (VI)

2. Lubricants

Lubricant Types (Oil, Grease, and Solid Film)

i. Oils – liquid lubricants used in engines, gearboxes, and hydraulics.

- Base Oils and Additives (mineral vs synthetic)
- Additives and their functions (Basic Awareness)

ii. Greases – semi-solid lubricants for bearings and slow-speed applications

- Grease Composition
- Common Thickeners
  - Compatibility/Incompatibility
- NLGI Grades

iii. Solid lubricants: Graphite, Molybdenum Disulfide (MoS_2), PTFE for extreme dry environments

3. Lubricant Applications

Lubrication Methods (Manual and Automatic)

Greasing Techniques and Best Practices (Quantity, Frequency, and Cleanliness)

Basic calculations for determining required lubricant volume

Basic calculations to determine re-lube and change frequencies

Ultrasound lubrication (Basic Awareness)

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Course Outline 2

4. Lubricant Sampling/Analysis Basics

Oil Sampling Process
i. Sample port locations
ii. Sampling admin (E.g. Proper completion of the oil sample label)
iii. Proper Sampling Techniques (to avoid sample contamination)

Oil Sampling and Visual Inspection Basics (Machine and Oil)
i. Visual Checks – color, clarity, foam, and sediment.
ii. Recognizing early failure signs: discolored oil, metallic sheen, sludge, or varnish.

Temperature, noise, and vibration can indicate lubrication problems.

5. Lubricant Condition Control

Basics of Contamination Control
i. ISO Cleanliness Codes – acceptable cleanliness levels
ii. Very minor contamination can reduce equipment life

Major Contaminants
i. Particles
ii. Water
iii. Air
iv. Fuel
v. Process Chemicals
vi. Cross-Contamination

Effects of Contamination

6. Lubricant Storage Management

Lubricant Reception Best Practice

Lube Storage and Handling Best Practices.
i. Store lubricants in clean, temperature-controlled areas
ii. Avoid cross-contamination (storage and application)
iii. Adherence to proper dispensing and transfer procedures

Lubricant Identification Systems

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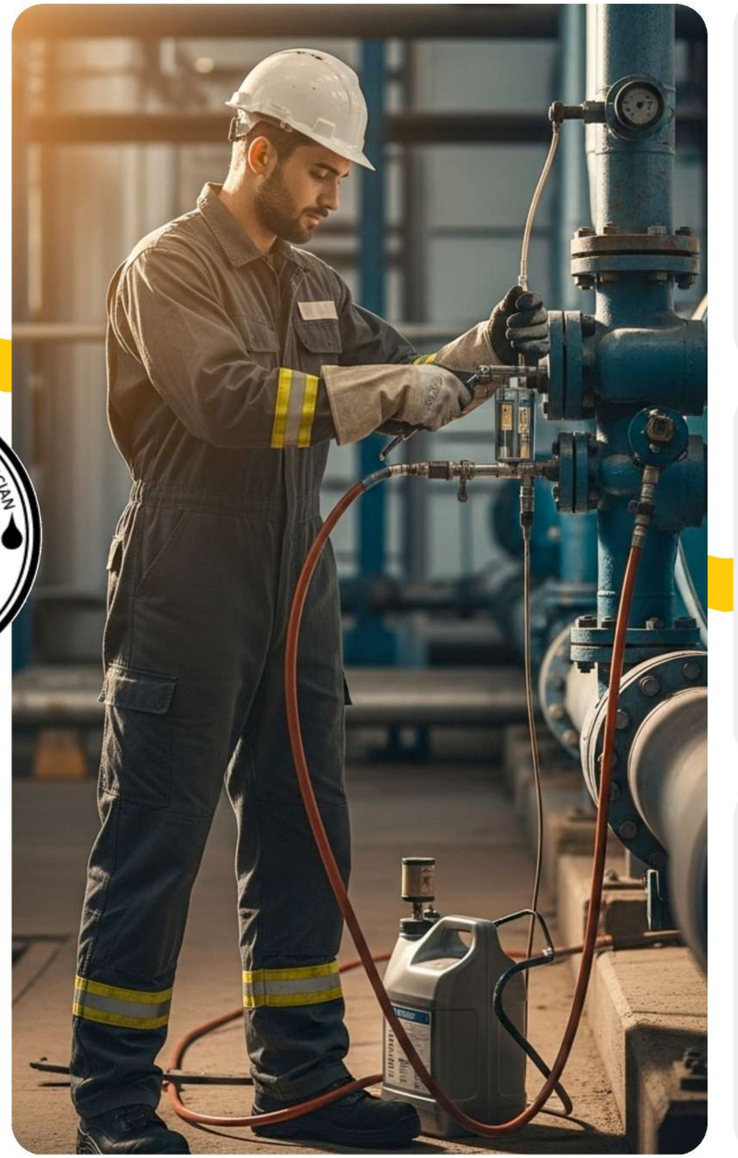
REQUIREMENTS :-



1 Education and / or Experience

No formal education or work experience **required** (recommended to have **basic understanding** of lubrication practices)

2 Training

No mandatory training required, **but** structured training and study materials are strongly **recommended**

3 Examination

Pass a **closed-book** exam: **70** multiple-choice **questions**, **2 hours**, minimum **70% to pass**

Recertification

The **LAT certification is valid for three (3) years** from the date of issue and **does not offer recertification**. As an apprentice-level credential, LAT holders are expected to continue building their lubrication knowledge through training and workplace exposure. The recommended progression pathway is to **pursue MLT I** and/or **MLA I** for continued professional development.

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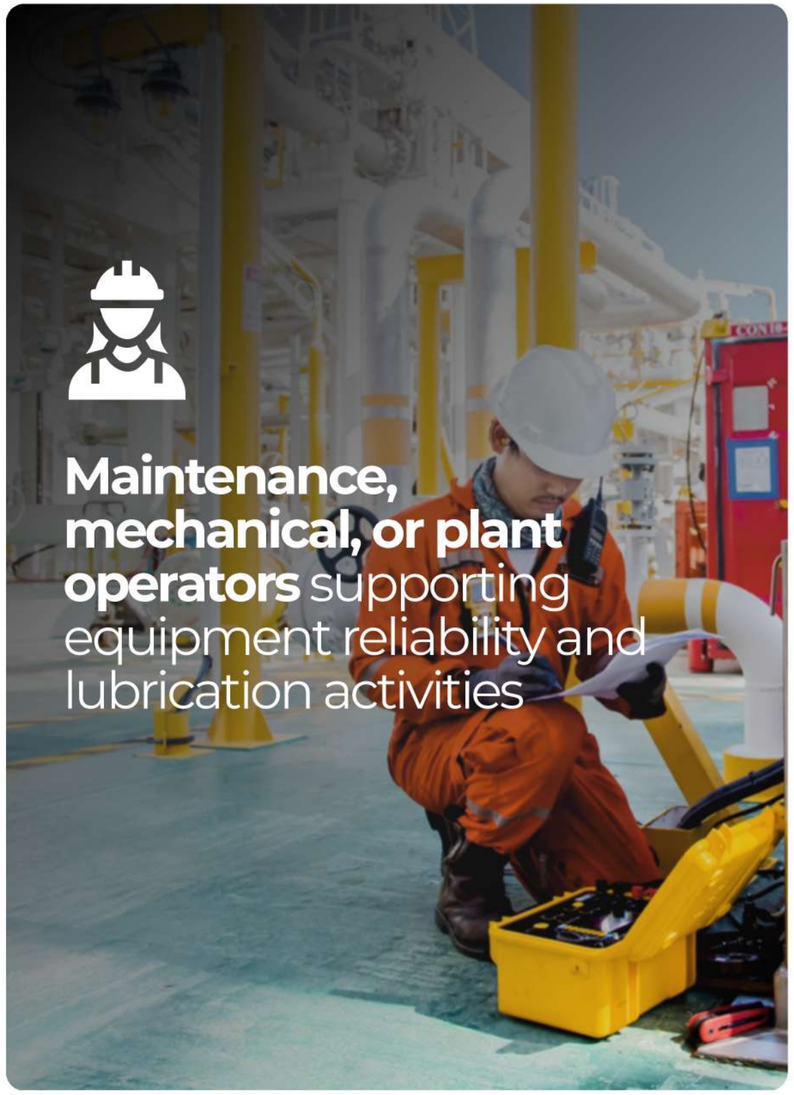
Who Should Attend?

New or entry-level technicians involved in basic lubrication tasks and routine maintenance



Maintenance, mechanical, or plant operators supporting equipment reliability and lubrication activities

Individuals preparing for career progression into lubrication and reliability roles (**MLT I / MLA I** pathway)

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Register Now

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