COURSE OVERVIEW RE0628
Certified Machinery Lubrication Technician (MLT) Level -I
ICML-MLT Certification

Course Title
Certified Machinery Lubrication Technician (MLT) Level -I: *ICML-MLT Certification*

Course Duration/Credits
Five days/3.0 CEUs/30 PDHS

Online Exam Window
As per ICML Schedule

Course Reference
RE0628

Course Date/Venue

Session(s)	Date	Venue
1	February 09-13, 2025	Al Khobar Meeting Room, Hilton Garden Inn, Al Khobar, KSA
2	May 11-15, 2025	Oryx Meeting Room, Double Tree by Hilton Al Saad, Doha, Qatar
3	August 10-14, 2025	Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
4	November 10-14	Ajman Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Course Description

This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.

In the severe weather of the Middle East, lubrication is a major challenge to every maintenance department. High operating costs, downtime, and wear-out of equipment make the life of every maintenance professional in the Middle East very difficult. Bearing in mind that the process plant is usually losing approximately 7% of its entire maintenance budget simply due to poor lubrication practices, it is vital that the maintenance practices become more optimized and proper lubrication program be implemented.

This course will introduce and establish the role of precision lubrication and analysis for improving machine reliability. It will provide an overview of lubricant construction and the general principles involved in lubricant selection for common plant machinery. Handling and application practices for both oils and gases will be reviewed.

The course will introduce contamination control strategies as a way to improve machine perfomance. It will provide a thorough introduction to the principles of lubricant analysis and introduce appropriate methods to collect samples as the first step in lubricant based machine condition assessment.

Course Objectives

Upon the completion of this course, each successful participant will be able to:-

- Get certified as a *"Machinery Lubrication Technician (MLT) Level - I"* from the International Council for Machinery Lubrication (ICML)
- Carryout maintenance strategy as well as discuss the lubrication theory covering tribology fundamentals, functions of a lubricant, hydrodynamic lubrication, elasto-hydrodynamic lubrication and mixed-film lubrication
- Describe lubricants comprising of base-oils, additives and their functions, physical, chemical, performance properties and classifications of oil lubricant and grease lubricant, grease lubrication, thickener types and thickener compatibility
- Employ lubricant selection, lubricant application, preventive and predictive maintenance
- Apply lube condition control for filtration and separation technologies, filter rating, filtration system design and filter selection
- Perform lube storage and management and implement lubricant receiving procedures, proper storage, inventory management, lube storage containers, proper storage of grease-guns and other lube application devices, maintenance of automatic grease systems as well as health and safety assurance

Exclusive Smart Training Kit - H-STK®

*Participants of this course will receive the exclusive "Haward Smart Training Kit" (**H-STK®**). The **H-STK®** consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of machine lubrication for all maintenance and reliability professionals including maintenance engineers, reliability engineers, lubricant analysts, lubrication technicians, craftsmen and millwrights, equipment operators, maintenance supervisors, predictive maintenance technicians, lubricant industry professionals and laboratory analysts.

Exam Eligibility & Structure

Exam candidates shall have the following minimum pre-requisites:

- Education and/or Experience - Candidates must have at least two years education (post-secondary) or on-the-job training in one or more of the following fields: machine lubrication, engineering, mechanical maintenance and/or maintenance trades.
- Training - Candidate must have received 16 hours of documented formal training in machinery lubrication as outlined in the Body of Knowledge of the MLT I. For online or recorded training, exercises, practice exams, and review exercises may be included in the training time total but shall not exceed three hours of the required course time. Candidate shall be able to provide a record of this training to ICML that shall include the candidate's name, the name and signature of the instructor, the dates of the training, and the number of hours spent in the training.
- Examination - Each candidate must successfully pass a 100 question, multiple-choice examination that evaluates the candidate's knowledge of the topic. Candidates have three hours to complete the closed-book examination. A score of 70% is required to pass the examination and achieve certification.

Course Certificate(s)\

(1) Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

(2) ICML certificates will be issued to participants who have successfully completed the course and passed the exam at the end of the course. Successful candidate will be certified as a *"Machinery Lubrication Technician (MLT) Level - I*".

(3) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course.

Haward Technology Middle East

Continuing Professional Development (HTME-CPD)

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CEU Official Transcript of Records

TOR Issuance Date: 20-Sep-18

HTME No. PAR10425

Participant Name: Nezar Al Hassan

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
RE0628-4D	**Certified Machine Lubricant Technician (MLT) Level -I:** *ISO 18436-4/ICML Certification*	September 17-20, 2018	26	2.6

Total No. of CEU's Earned as of TOR Issuance Date **2.6**

TRUE COPY

Maricel De Guzman
Academic Director

Haward Technology has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 1760 Old Meadow Road, Suite 500, McLean, VA 22102, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2013 Standard which is widely recognized as the standard of good practice internationally. As a result of their Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for programs that qualify under the ANSI/IACET 1-2013 Standard.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking Continuing Education Units (CEUs) in accordance with the rules & regulations of the International Association for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology is accredited by

P.O. Box 26070, Abu Dhabi, United Arab Emirates | Tel.: +971 2 3091 714 | Fax: +971 2 3091 716 | E-mail: info@haward.org | Website: www.haward.org

Certificate Accreditations

Haward Technology is accredited by the following international accreditation

- International Council for Machinery Lubrication (ICML)

  This Machinery Lubrication Technician Certification course complies with the **ICML** (**International Council for Machinery Lubrication**) regulation and is designed to certify successful participant as a Machinery Lubrication Technician (MLT).

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

- The International Accreditors for Continuing Education and Training (IACET - USA)

  Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

  Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

  Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:

Mr. Martin Williamson, PE, BSc, CMRP, MLE, MLA III, MLT II, is an **International Authority** in **Machinery Lubrication**, **ICML Certification** and **ISO 18436 Standards** with over **30 years** of practical experience. He is an **ICML Authorized Instructor & Consultant**. His wide expertise covers **Machinery Lubrication**, **ICML Certification**, **ISO 18436-4**, **ISO Standards Development**, **Condition Monitoring**, **Vibration & Oil Analysis**, **Contamination Monitoring, Tribology**, **Reliability Engineering** and **Scheduling Design**. He is currently the **Managing Director** of **KEW Engineering Ltd**. and a **Co-Director** of **Uptime 101 Pte Ltd**. that provides reliability and maintenance best practices engineering consulting and training services to the **petrochemical**, **oil**, **gas** and allied industries in **Europe**, **Australia**, **North America**, the **Middle East**, **Asia** and **South African** regions.

For the last 20 years, Mr. Williamson has been presenting training classes and undertaking consulting projects on an international level on behalf of **Noria Corporation** and other key clients such as **BP**, **Dow Corning**, **Marathon Oil** and **Cargill**. Since he attained his **CMRP** (Certified Maintenance & Reliability Professional) status, he has been involved with **ICML** (International Council for Machinery Lubrication) as an **ICML Authorized Instructor & Consultant** and is working on various related **ISO** working groups. Prior to this, he gained his remarkable experience for being the **General Manager** in Noria UK Limited (UK), **Oil Analysis Product Manager** in Rockwell Automation Entek (UK), **Senior Technical Support Engineer** in Pall Europe Limited (UK) and **Mechanical Engineer** in ISCOR Ltd.

Mr. Williamson is a **Professional Engineer** and has a **Bachelor's** degree in **Mechanical Engineering**. Further, he is a **Member** of the **Board** of the **ICML**, a **Certified CMRP** (Maintenance & Reliability Professional) from the Society of Maintenance & Reliability Professionals (**SMRP**) and a **Certified MLA III** (Machinery Lubricant Analyst), a **Certified MLT II** (Machinery Lubricant Technician) and a **Certified MLE I** (Machine Lubricant Expert) from the International Council for Machinery Lubrication (**ICML**). He is also a **Certified Instructor/Trainer** and a **Certified Trainer** for **BOSIET** (Basic Off-Shore Safety Induction and Emergency Training) and **HUET** (Helicopter Underwater Evacuation Training). He has further delivered numerous trainings, courses, seminars, workshops and conference internationally.

Exam Fee

US$ 320 per Delegate + **VAT**.

Training Fee

Dubai	**US$ 7,000** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Abu Dhabi	**US$ 7,000** per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Doha	**US$ 7,500** per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Al Khobar	**US$ 7,000** per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures
20% Practical Workshops & Work Presentations
30% Hands-on Practical Exercises & Case Studies
20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Maintenance Strategy*** *Why Machines Fail ● The Impact of Poor Maintenance on Company Profits*
0930 – 0945	*Break*
0945 - 1015	***Maintenance Strategy (cont'd)*** *The Role of Effective Lubrication in Failure Avoidance*
1015 - 1130	***Lubrication Theory*** *Fundamentals of Tribology ● Functions of a Lubricant*
1130 – 1230	***Lubrication Theory (cont'd)*** *Hydrodynamic Lubrication (Sliding Friction) ● Elasto-Hydrodynamic Lubrication (Rolling Friction)*

1230 – 1245	*Break*
1245 – 1330	***Lubrication Theory (cont'd)*** *Mixed-Film Lubrication*
1330 - 1420	***Lubricants*** *Base-Oils ● Additives & their Functions*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0930	***Lubricants (cont'd)*** *Oil Lubricant Physical, Chemical & Performance Properties & Classifications*
0930 - 0945	*Break*
0945 – 1130	***Lubricants (cont'd)*** *Grease Lubrication (How Grease is Made?, Thickener Types, Thickener Compatibility, Grease Lubricant Physical, Chemical & Performance Properties & Classifications)*
1130 - 1230	***Lubricant Selection*** *Viscosity Selection ● Base-Oil Type Selection*
1230 – 1245	*Break*
1245 - 1420	***Lubricant Selection (cont'd)*** *Additive System Selection ● Machine Specific Lubricant Requirements (Hydraulic Systems, Rolling Element Bearings, Journal Bearings, Reciprocating Engines, Gearing & Gearboxes)*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 - 0930	***Lubricant Selection (cont'd)*** *Application & Environment Related Adjustments*
0930 - 0945	*Break*
0945 - 1130	***Lubricant Application*** *Basic Calculations for Determining Required Lubricant Volume*
1130 - 1230	***Lubricant Application (cont'd)*** *Basic Calculations to Determine Re-Lube & Change Frequencies*
1230 - 1245	*Break*
1245 - 1420	***Lubricant Application (cont'd)*** *When to Select Oil; When to Select Grease?*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 - 0930	***Lubricant Application (cont'd)*** *Effective Use of Manual Delivery Techniques*
0930 - 0945	*Break*
0945 – 1100	***Lubricant Application (cont'd)*** *Automatic Delivery Systems (Automated Deliver Options: Automated Grease Systems, Oil Mist Systems, Drip & Wick Lubricators; Deciding When to Employ Automated Lubricators; Maintenance of Automated Lubrication Systems)*

1100 - 1230	***Preventive & Predictive Maintenance*** *Lube Routes & Scheduling ● Oil Analysis & Technologies to Assure Lubrication Effectiveness*
1230 - 1245	*Break*
1245 - 1420	***Preventive & Predictive Maintenance (cont'd)*** *Equipment Tagging & Identification*
1420 – 1430	***Recap***
1430	*Lunch & End of Course*

Day 5

0730 - 0930	***Lube Condition Control*** *Filtration & Separation Technologies ● Filter Rating*
0930 - 0945	*Break*
0945 - 1100	***Lube Condition Control (cont'd)*** *Filtration System Design & Filter Selection*
1100 - 1230	***Lube Storage & Management*** *Lubricant Receiving Procedures ● Proper Storage & Inventory Management ● Lube Storage Containers*
1230 - 1245	*Break*
1245 - 1330	***Lube Storage & Management (cont'd)*** *Proper Storage of Grease-Guns & Other Lube Application Devices ● Maintenance of Automatic Grease Systems ● Health & Safety Assurance*
1330 – 1400	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course*
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

MOCK Exam

Upon the completion of the course, participants have to sit for a MOCK Examination similar to the exam of the Certification Body through Haward's Portal. Each participant will be given a username and password to log in Haward's Portal for the MOCK exam during the 30 days following the course completion. Each participant has only one trial for the MOCK exam within this 30-day examination window. Hence, you have to prepare yourself very well before starting your MOCK exam as this exam is a simulation to the one of the Certification Body.

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-

Course Coordinator

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org