

Learn Precision Lubrication Skills For Maximizing Machine Reliability

MACHINERY LUBRICATION | TRAINING

MACHINERY LUBRICATION I

- Effective lubricant contamination control strategies for extending machine life
- How to set up a world-class lube room
- Lubricant labeling and coding systems – what works and what doesn't

MACHINERY LUBRICATION II

- How slight errors in viscosity selection can result in wear and energy losses
- Why varnish, sludge and deposits are a problem
- Best practices for selecting and applying open gear lubricants





TAKE THE GUESSWORK OUT OF MACHINERY LUBRICATION

If you aren't using the correct lubricant at the right time in the right quantity and in the right place, you could be doing your equipment more harm than good. Modern lubrication programs have changed considerably from "old-school" methods that have been passed down through generations. These courses contain a strategic collection of the very best practices for applying, managing and implementing lubrication in your facility.

With Machinery Lubrication I and II, you'll be able to:

Uncover **the secrets of lubricant selection** and understand the importance of lubricant properties and strategies for selecting the correct lubricant for each machine application.

Obtain **effective oil analysis with precision oil sampling** and learn how to get data-rich oil samples, where to install oil sampling ports, and what sampling equipment should and shouldn't be used.

Understand the **best practices for lubricant storage, handling and dispensing** and how award-winning maintenance programs design lube storage areas, dispensing stations and transfer carts.

Learn **the four Rs of lubrication** (right lubricant, right time, right quantity and right place) and the newest methods for implementing the best lubrication practices.

Realize that **grease gun can be a lethal weapon**. In the hands of an untrained operator, a grease gun can deliver pressure up to 15,000 psi – 30 times what a typical bearing seal can handle. These courses will teach you proper grease gun practices.



Vendor Neutrality

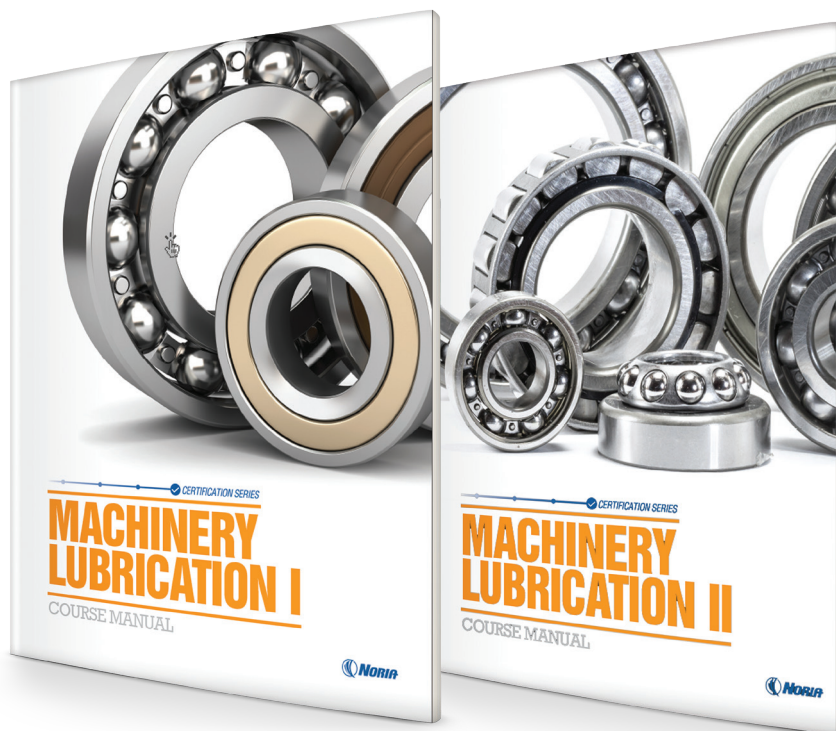
Noria's vendor neutrality ensures an impartial, unbiased presentation of the requirements necessary for hardware implementation. Noria does not recommend one supplier's products over another's, maintaining the strictest vendor-neutral integrity.



You may think you know what you are doing, **but this class brings things you never considered to light.**

–Clayton Smith,
USN, Performance Monitoring Team





What You Get When You Attend

When you leave these courses, you'll consider your course manual an indispensable on-the-job reference for years to come.

These trainings also include:

- Access to a color copy of the course presentation (it cannot be downloaded, only viewed)
- Pre-assessment (knowledge-based quiz)
- Hotel information, transportation options and local restaurant guide
- Course agenda
- Free subscription to *Machinery Lubrication* magazine
- ICML FAQs for certification exams
- Course instructor contact information

Great course and instructor. Gave tons of useful information and directed where we should begin back at the plant.

– Nathanael Gross,
Associate Maintenance Engineer, CalPortland

Who Should Attend?

- All Maintenance Professionals
- Lubrication Technicians
- Craftsmen or Millwrights
- Equipment Operators
- Laboratory Analysts
- Lubrication Engineers
- Maintenance Managers
- Maintenance Supervisors
- Manufacturing and Industrial Engineers
- Operations Managers

What Industries Will Benefit?

- Aerospace
- Automotive Manufacturing
- Earthmoving
- Food and Beverage
- General Manufacturing
- Lumber and Wood
- Municipal Utilities
- Petrochemical
- Pharmaceuticals
- Primary Metals
- Power Generation
- Process Manufacturing
- Pulp and Paper
- Rubber and Plastic
- Textile
- Transportation



MACHINERY LUBRICATION I

Course Outline

How Lubrication Affects Machine Reliability

- Financial benefits from achieving lubrication excellence
- Four equipment maintenance strategies and when each applies

Lubrication Fundamentals

- Six important functions of lubricating oils
- How oils and greases are formulated and why it is important
- How friction is generated in lubricated machinery
- The importance of oil film thickness and critical clearances

Additives, Base Oils and Grease Thickeners

- How lubricant properties irreparably change
- Seven important physical properties of a base oil
- The importance of API's five base oil categories
- What causes grease to dry out and 18 ways to prevent it
- How to detect the root causes of lubricant oxidation
- When to select one of the six most used synthetic base oils
- How to use temperature to determine the right base oil for your machine
- How to select grease thickeners for your application

Lubricant Performance Properties

- Key additives that enhance lubricant performance
- Viscosity grades, measurement and reporting
- Why viscosity index is important
- Oil viscosity changes and how to set monitoring limits
- Lubricant performance tests and reporting
- How water contamination generates other contaminants
- How to control and eliminate aeration problems

Grease Application Methods

- How to protect against incompatible grease mixtures
- Advantages/disadvantages of centralized lubrication systems
- Best practices for greasing motor bearings
- How to control pressure when greasing bearings
- The unique problems caused by over greasing
- 3 critical instructions to give your electric motor rebuild shop
- Comparing single- and multi-point lubrication options
- How to calculate greasing intervals/quantity
- Best practices for ultrasonic/sonic-based greasing

Oil Application Methods

- Overview of oil lubrication methods/devices
- How to use oil mist and other automatic lubrication methods
- Using pressure spray methods for gearboxes
- Best practices for the maintenance of grease guns and fittings
- Protect against problems caused by constant-level oilers
- Overview of single-point direct lubrication systems

Journal Bearing Lubricants

- The eight most common journal bearing lubrication problems
- How to select journal bearing viscosity based on speed

Rolling-element Bearing Lubricants

- Nine factors affecting rolling-element bearing lubricant selection
- How to convert required operating temperature viscosity to ISO viscosity

Gear Lubricants

- Five key requirements for gear oil
- How to select the best viscosity for a gear lubricant
- Best practice guidelines for storing spare gearboxes
- 10 conditions that may require synthetic gear lubricants

- Lubrication best practices for enclosed gears – a 12-point checklist
- Mastering the challenges of open gear lubrication

Automotive and Mobile Equipment Drive-line Lubricants

- How to read a motor oil label: what matters
- The six critical objectives a motor oil must accomplish
- Understanding API service classifications for engine and gear oils
- Service classifications for automotive greases – how to select
- Extending engine life – surprising engine oil filter study results

Compressor Lubricants

- Steps you can take right now to combat compressor lubricant failure
- The most common compressor lubricant stressors
- When to use synthetic compressor lubricants and why

Steam and Gas Turbine Lubricants

- Why turbine/generator lubricants are the No. 1 contributor to forced outages
- Comparing steam and gas turbine oils – how they differ
- Checklist for best-practice steam turbine lubrication

Hydraulic Fluids

- How to select the ideal hydraulic fluid viscosity for gear, vane and piston pumps
- Nine key hydraulic fluid requirements and why they matter
- Specific conditions that may require a synthetic hydraulic fluid
- Fire-resistant hydraulic fluids
- Hydraulic system maintenance best practices

Contamination Control

- Strategies for building reliability through contamination control
- The seven most destructive contaminants and how to control them
- Specific steps for managing a proactive lubricant maintenance program
- The ISO solid contaminant code – understand it, track it
- 10 ways to get more mileage out of portable filter carts
- How dirt, metal particles and soot mechanically destroy machine surfaces
- Guidelines for controlling machine surface fatigue and extending machine life
- The No. 1 cause of machine wear and how to manage it
- How to set realistic cleanliness levels for lubricants
- Effective lubricant contamination control strategies for extending machine life
- 4 ways water contamination attacks lubricant additives
- How to set limits for water-

in-oil contamination

- Managing the root causes of foam and aeration
- Best practices for excluding and removing contaminants
- The right way to control contamination in tanks and sumps
- How oil filters are rated
- Best practices for removing water contamination from oil
- The unique problems created by varnish

Oil Drains, Flushing and Reservoir Management

- How to optimize and extend oil change intervals
- Interval vs. condition-based oil changes – pros and cons
- Metrics for monitoring lubricant consumption
- Best practices for oil changes
- Know how and when to perform a flush
- The best procedures for oil draining and refilling
- How and when to use the bleed-and-feed strategy for extending oil drains
- Selecting the right cleaning and flushing procedures

Storing, Handling and Managing Lubricants

- How to set up a world-class lube room
- How to know when to reject a new oil delivery
- Implement a lubricant consolidation program and select suppliers
- Used lubricant storage, handling and disposal best practices

- Bulk lubricant storage do's and don'ts
- Guidelines for storing and handling drums
- Lubricant dispensing options and what you must avoid
- Lubricant coding and identification systems – what works and what doesn't
- Portable oil transfer and filter carts selection advice
- How and where to store oil transfer and filter carts
- Understanding and managing lubricant storage life
- Keeping grease fresh – best practices for storage

Design and Inspect for Lube Excellence

- Accessorizing equipment for lubrication excellence
- Seven critical accessories for lubricant inspection and sampling
- The right machine accessories for effective contamination control

Lubricant Failure

- Know the factors that contribute to lubricant failure
- Thermal and oxidation processes and their effects on lubricants and additives
- Common wear mechanisms caused by debris
- Recognize what causes lubricant degradation
- Recognizing the byproducts of lubricant failure and wear debris
- Distinguishing the specific test that measures the forms of lubricant degradation and

wear debris monitoring

- Interpret data to set alarms and limits based upon test results

Used Oil Sampling and Analysis Fundamentals

- Types and categories of oil analysis
- Applications for oil analysis
- Overview of oil analysis tests
- Elements of a successful oil analysis program
- How clean should oil sample bottles be?
- How to find the best sampling locations
- Oil sampling valve and hardware recommendations
- A quick method for optimizing sampling intervals
- An oil sampling technique that ruins trending
- The importance of primary and secondary sampling points
- Advice for sampling hard-to-reach machines
- How to properly sample circulating systems
- Safe, effective high-pressure sampling from hydraulic systems

Essential Field Inspections

- 12 questions your oil filter will answer about your machine
- Visual inspections you can get big results from right now
- Quick tips for using scent, sound and touch to inspect lubricants



MACHINERY LUBRICATION II

Course Outline

Lubrication PM Optimization and Design

- Five questions to ask about every lubrication PM
- How to rationalize and modernize your lubrication PMs
- What causes grease dry-out and when it should be refreshed

Troubleshooting Lubrication Problems

- How to troubleshoot lubrication problems effectively
- Four troubleshooting data- collection guidelines
- How to recognize wear patterns on gear teeth
- 28 tips for preventing gear failures
- How to effectively troubleshoot bearing failures

Lubrication and Oil Analysis Metrics

- Four metrics for measuring lubrication effectiveness
- How to track costs and savings
- Measuring the impact of lubrication excellence on RONA

Oil Drains, Flushing and Reservoir Management

- 10 ways to ensure sump lubricant health
- How to optimize inter-

val-based oil changes

- Strategies for condition-based oil changes
- How to use a bleed-and-feed strategy for extending oil drains
- How to trend oil consumption ratios
- Best practices for oil draining and refilling
- Checklist of important machine accessories for inspections and sampling
- Seven strategic machine accessories for contamination control

Lubricating Grease Application

- What to do before and after installing an electric motor
- How to calculate ideal relubrication volume for electric motors
- How to optimize bearing regreasing intervals
- Strategy for ultrasonic/sonic-based regreasing volume
- How to determine bearing grease fill levels

Lubricant Application

- 7 important guidelines for lubricating plain bearings
- Considerations for proper worm gear lubrication
- Best practices for selecting and applying open gear

lubricants

- Relubrication frequency recommendations for gear and grid couplings
- 14 best practices for steam turbine lubrication
- Best practices for process pump lubrication
- Best practices for lubricating compressors

Lubrication Fundamentals

- Factors that influence hydrodynamic lubrication
- Five things that can change oil film thickness
- How gear speed influences lubrication
- Seven lubrication factors for finding the “sweet spot” for energy consumption

Base Oils

- API base oil groups and why they are important
- How synthetic base oil properties compare
- Strengths, weaknesses and applications for six synthetic base oils
- Compatibility of eight seal materials with different fluid types

Viscosity and Viscosity Index

- Understanding the viscosity/temperature chart

- Cold-temperature motor oil viscosity basics
- How oil aging affects oil viscosity
- How slight errors in viscosity selection can result in wear and energy losses
- How to convert required operating temperature viscosity to ISO viscosity grades

Oxidation and Thermal Stability

- How antioxidants alter oil life
- How oxidation stability is measured and why it's important
- Why varnish, sludge and deposits are a problem
- The typical sequence of events leading to varnish

Air Release and Foam Control

- Causes of poor air release and foaming in oil
- How to know when oil foam is a problem and how to troubleshoot
- Strategies for controlling aeration and foam

Lubricant Degradation

- How to detect mixed lubricants
- Five ways lubricants degrade irreparably

- Nine ways additives are rendered useless
- Lubricant shelf life – factors to control

Leakage Stability

- How fluid properties affect seal performance
- How to use dye for efficient leak detection
- Pros and cons of quick stop leak agents

Lubricant Selection and Consolidation

- The Seven critical factors when selecting grease

- Properties of grease that affect pumpability
- How service temperature affects different grease types
- How grease properties change due to incompatible mixtures
- Importance of grease properties by application
- Eight critical factors for selecting a lubricant
- Basic and advanced approaches for consolidating lubricants
- Matching lubricants to machines based on robustness, price and usage

- Managing the lubricant vendor service and delivery quality
- How new lubricant quality can be compromised
- How to read an oil can
- How to determine when to select a monograde vs. a multigrade oil
- Using bearing speed factors to determine NLGI numbers
- Selection criteria for electric motor grease
- 10 desired properties for refrigeration lubricants
- Five requirements for gear

oils and why they are important

- How to decide when synthetic gear lubes are required
- Three methods for selecting gear oil viscosity
- Conditions when synthetic hydraulic fluids may be required
- How to select the correct hydraulic fluid viscosity
- How the hydraulic fluid selection process can save money
- Four important characteristics every chain lubricant should have

4 REASONS TO ATTEND A NORIA TRAINING

1. We are the Source. Noria is the global authority in machinery lubrication and oil analysis. Our team of experts combines a wide variety of industry experience in reliability, engineering and lubrication excellence. Each year, we provide world-class training to thousands of professionals worldwide. Our team also relies on a larger network of industry leaders to stay current with industry technologies, trends and client needs. We work hard to bring the best services and highest level of expertise to each client.

2. We Implement Change that Endures. Noria's courses are aligned with the needs of adult learners, as determined by an expert staff which includes an adult-learning specialist, an instructional designer and multiple graphic and video/multimedia developers. Training sessions

are goal-oriented, relevant and practical. Interactive opportunities are incorporated when possible to maximize knowledge retention and understanding.

3. We Want You to Succeed. All course material – from beginner to advanced – is task-based and immediately applicable in the workplace. Students receive preventive maintenance tips and learn why every strategy is important. Knowledge is powerful, and when our workforce becomes empowered with excellent lubrication methods, the results are a safer, more efficient and more reliable industry.

4. We Guarantee Satisfaction. Noria proudly stands behind its training courses. If you're not satisfied with the information and insights you gain at these events, we will refund 100% of your paid registration fee.



It was a great learning experience that will benefit me and my company.

– Kris Chamberlin,
Engineer, Lopez Foods Inc.



ONSITE TRAINING

Need to train your team, but training has always been too expensive? More and more companies are realizing the value of bringing training onsite. This flexible and cost-effective option allows you to train as many employees as desired. The benefits of onsite training are obvious and rewarding:

- Tailored curriculum to address your company's needs in a more personable, intimate setting
- Confidential company issues and solutions may be discussed freely onsite
- Cost-effective return on investment – with significant savings onsite versus travel expenses, time away from the plant, downtime and schedule disruptions
- Strong team-building opportunities

Lubrication is the foundation of reliability. Lubrication training is the catalyst for change, and Noria is the world leader in lubrication and oil analysis education and consulting. Bring us onsite for tailored, private team training. Call us today at 800-597-5460.



ONLINE LEARNING

We realize schedules get hectic. That's why Noria offers three of its most popular courses online. Machinery Lubrication I, Machinery Lubrication II, and Food Processing Equipment Lubrication are all available anywhere you have an internet connection. With our online learning, you receive:

- **Flexible Certification Preparation:** Gain the right understanding and steps for excellent condition-based maintenance, prepare for a certification test and do it all on your own time – whenever it is best for you.
- **Onboarding:** Use this training for onboarding new employees or to get your team up to speed quickly, efficiently and in alignment with your company culture, skills requirements and performance expectations.
- **Self-paced:** Log in anywhere, anytime on your customized schedule for one year. Play, pause, rewind and replay as often as needed. Learn while maintaining plant and operational schedules. ADA-compliant closed captioning is available.
- **Pre-/Post-assessment Quizzes:** Track your knowledge and understanding through each section with quizzes designed to show your progress and areas that may require further attention.



For more information, visit Noria.com/train or call 918-392-5063.

FROM OUR RESOURCE CENTER

The Level I MLT Study Packet

This study packet is designed to be used for both ICML Level I MLT and Level I MLA certification. It includes:

Flash Card Pack - 385 flash cards to help you prepare for ICML Level I MLT certification.

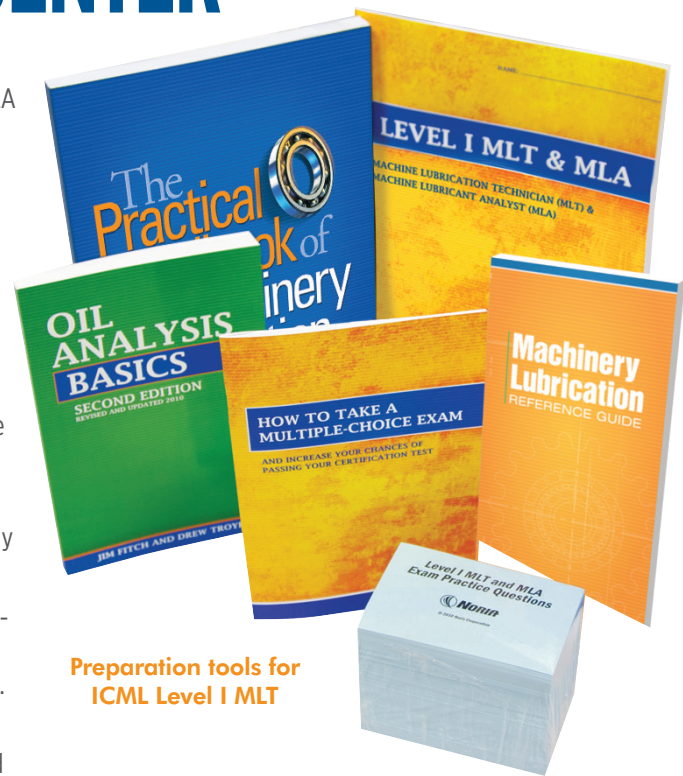
125-Question Practice Exam - This multiple-choice practice test is a great self-assessment tool and helps you prepare for ICML Level I MLT certification. Licensed for use by one person.

How to Take a Multiple-Choice Exam - Includes advice from professionals who have passed ICML certification exams as well as helpful hints for the night prior to the exam, steps to take before entering the exam room, techniques to manage your time during the exam and advice for handling different types of questions.

Machinery Lubrication Reference Guide - Is packed with useful checklists, look-up tables, charts and illustrations, and is designed to make information easily accessible where you need it.

Oil Analysis Basics - Presents the fundamentals of oil analysis for machinery condition monitoring in an easy-to-understand format. You'll learn everything from how to take a proper oil sample to how to select a test slate for your applications.

The Practical Handbook of Machinery Lubrication - Once you start reading this book, you probably won't stop until you finish it. It is that easy to read. You'll find understandable explanations of how lubricants work, what they're made of and how they break down. Topics ranging from engine lubricants to industrial oils and hydraulic fluids are covered.



Preparation tools for
ICML Level I MLT

Retail Price: ~~\$334.95~~

Your Price: **\$295**

Plus \$14 for shipping in the U.S.

GET CERTIFIED

Certification testing will be held on the Friday following the training by the International Council for Machinery Lubrication.

How To Certify

To register for a certification exam, visit www.LubeCouncil.org.

Which Certifications?

This course is designed to help you prepare for the following ICML certification exams:

- Level I Machine Lubrication Technician (MLT)
- Level II Machine Lubrication Technician (MLT)

Find out more about these ICML certification exams at the ICML website: www.LubeCouncil.org.

What Is ICML?

The International Council for Machinery Lubrication (ICML) is a vendor-neutral, not-for-profit organization founded to facilitate growth and development of machine lubrication as a technical field of endeavor. Among its various activities, ICML offers skill certification testing for individuals in the fields of machine condition monitoring, lubrication and oil analysis.





TRAINERS



Jim Fitch

Jim Fitch, a founder and CEO of Noria Corporation, is a highly sought-after consultant and trainer described by his clients as “insightful, dynamic and thorough.” He has advised hundreds of companies on developing their lubrication and oil analysis programs and has taught more than 400 training courses in more than 20 countries. Jim serves as a U.S. delegate to the ISO tribology and oil analysis working group and has been awarded numerous patents. Since 2002, Jim has also been the director and board member of the International Council for Machinery Lubrication.



Wes Cash

Wes Cash, director of technical services, is an enthusiastic, relatable speaker who connects comfortably with his audience. Wes’ style and easy-to-understand approach to the curriculum creates an interactive forum for learning. He is certified by the International Council for Machinery Lubrication as a Level II Machine Lubrication Technician and Level III Machine Lubricant Analyst, as well as a Certified Lubrication Specialist by the Society of Tribologists and Lubrication Engineers.



Bennett Fitch

Bennett Fitch, director of product development and services, is an animated, experienced instructor with an interactive, yet relaxed approach to his audience. He received his bachelor’s degree in mechanical engineering from Georgia Institute of Technology with a concentration in applied tribology. Bennett is certified by the International Council for Machinery Lubrication as a Level III Machine Lubricant Analyst and a Level II Machine Lubrication Technician.



Matt Adams

Matt Adams is a technical consultant at Noria Corporation, concentrating in the field of predictive maintenance. A resourceful, team-oriented individual, he works to gain respect and knowledge with the ultimate goal of exceeding expectations. Matt has experience in multiple condition-based maintenance technologies and focuses the majority of his attention on lubrication program development, training and general consulting. Prior to joining Noria, he spent seven years in the fossil and nuclear power generation industry in the predictive maintenance field for Tennessee Valley Authority and four years in the manufacturing industry functioning in an industrial engineering role for A.O. Smith Water Products Co.



Alejandro Meza

Alejandro Meza, a senior technical consultant, offers more than 20 years of experience in the lubricant industry, technical services, quality assurance, training, consulting and development in Brazil, Mexico, the United States and the Americas region. He has represented Noria in Brazil, developing and delivering training programs along with field and consulting services, and has also delivered Noria services in Australia, New Zealand, Argentina and Suriname. Alejandro is certified by the International Council for Machinery Lubrication as a Level III Machine Lubricant Analyst and Level II Machine Lubrication Technician. He is also a Certified Maintenance and Reliability Professional.



Bob Scott

Bob Scott brings to his courses a wealth of “in the trenches” experience with more than 30 years of technical experience with lubricants, lubrication and related machinery. Prior to operating his own business, Bob spent almost 20 years at Shell Canada Products Ltd., where he gained extensive laboratory and field experience in the development of lubricants and direct sales to industrial customers. For Noria, he has served as an instructor of Machinery Lubrication and Oil Analysis courses throughout the United States and Canada. He is certified as a Level II Machine Lubrication Technician and Level III Machine Lubrication Analyst, as well as a Certified Lubrication Specialist. Bob’s certifications also include Level II Laboratory Lubricant Analyst and Level II Oil Monitoring Analyst.



Jerry Putt

During a 38-year tenure with Goodyear, Jerry Putt held numerous corporate positions, including managing the mechanical facilities, process engineering and plant engineering departments, as well as creating a process reliability team with worldwide responsibilities. In addition to having been an executive member of the Society for Maintenance and Reliability Professionals (SMRP), Jerry has been on the advisory board for the International Council for Machinery Lubrication since 2001. He is certified as a Level I Machine Lubrication Technician and Level I Machine Lubricant Analyst, and has a Certificate of Mechanical Competency from the Republic of South Africa, in addition to being a Certified Lubrication Specialist.



NORIA TRAINING REGISTRATION FORM

HOW TO REGISTER

ONLINE

www.noria.com
Register online to expedite
your registration.

FAX (3-4 days for processing.)

+1-918-746-0925

PHONE

800-597-5460
or
918-749-1400

MAIL (3-4 weeks for processing.)

Noria Training
1328 E. 43rd Court
Tulsa, OK 74105

PLEASE PRINT CLEARLY

Last Name	First Name	M.I.
Job Title	Organization/Business Name	
Mailing Address		
City	State/Province	Postal Code/ZIP
Country		
Phone	Email (required)	

Note: The mailing address is where all mailed correspondence about this registration will be sent. Please print email address clearly, as this is how Noria communicates important program details to you.

PLEASE REGISTER ME FOR THE FOLLOWING COURSE(S):	COURSE DATE	LOCATION	
Industrial Lubrication Fundamentals			\$1,495
Food Processing Equipment Lubrication Online			\$279
Machinery Lubrication I			\$1,495
Optional: Study Packet - Level I MLT / Level I MLA <i>Price includes shipping to a U.S. address.</i>			\$307
Machinery Lubrication II			\$1,495
Oil Analysis Report Interpretation Workshop			\$1,495
Oil Analysis II			\$1,495
Optional: Study Packet - Level II MLA <i>Price includes shipping to a U.S. address.</i>			\$310
Oil Analysis III			\$1,495
Total Amount Due: \$ <i>Price includes shipping to a U.S. address.</i>			

Check is enclosed (Allow 3-4 weeks for processing.) Please make checks payable to Noria Corporation in U.S. dollars drawn on a U.S. bank.

I authorize Noria Corporation to charge \$ _____ to my:
VISA MasterCard AMEX Discover

Card Number _____ Expiration Date _____

Signature _____

Print name as it appears on credit card bill

Our Purchase Order is attached.

P.O. Number _____

CANCELLATIONS AND SUBSTITUTIONS

Registrations cancelled more than 30 days prior to the start of the course will receive a full refund. Cancellations made less than 30 days prior to the start of the course are subject to a \$75 service charge. Cancellations made less than 14 days prior to the start of the course are not eligible for refunds. If you are unable to attend and it is within 14 days of the course start date, you may send a colleague in your place. Visit www.noria.com/train/cancellations for the complete cancellation and transfer policy.

CERTIFICATION EXAMS

Certification testing is offered by the ICML the morning following this training course at the same hotel. Please contact the ICML to register for a certification exam or register online at their website:

International Council for Machinery Lubrication
Phone: 918-259-2950 • Fax: 918-259-0177
E-mail: info@lubecouncil.org • Online: lubecouncil.org

TRAINING CALENDAR

Machinery Lubrication Level I

Location	Date
Milwaukee, WI	August 6-8, 2019
Portland, OR	September 17-19, 2019
Cincinnati, OH	October 15-17, 2019
Phoenix, AZ	November 19-21, 2019
Dallas, TX	December 10-12, 2019
Online	Always Available

Machinery Lubrication Level II

Location	Date
Tulsa, OK	September 17-19, 2019
Phoenix, AZ	November 19-21, 2019
Online	Always Available

CUSTOMER LIST

Many of Noria's customers view our services as a competitive advantage, so we can't provide a complete list of everyone with whom we have worked. Here's a small sample of the companies we have helped:

