



### Lubrication of Rolling Element Bearings

#### Recommended for

Maintenance personnel and engineers responsible for bearing lubrication, lubricant specification and lubrication system planning and design.

#### Course objective

Upon completion, students will be able to evaluate and select appropriate lubricants for a wide variety of rolling element bearing applications.

#### 2009 course schedule

May 4–6	Montreal (French), PQ
June 23–25	Chicago, IL
Sept. 22–24	Toronto, ON
Nov. 3–5	Philadelphia, PA

#### 2009 tuition

Public classes	\$1,095
On-site	
per class	\$12,995
# people	16
17+ people	\$395 per person

#### 3 days

A written examination is included with this course and is conducted on the afternoon of the final day of class.

#### Course description

This course covers real-world bearing lubrication in a dynamic, skills-based learning approach. Upon course completion, students will have learned the skills needed to choose, apply and maintain lubricants, and lubricating procedures in bearing applications plant wide.

Case histories will be used to demonstrate concepts and stimulate discussion. Students will be guided through examples, then apply the concepts to arrive at practical solutions to their own in-plant situations. Specific topics includes:

#### Lubrication fundamentals

- Functions of lubrication
- Basic expressions
- Lubricant additives and their effects
- Avoiding surface damage in bearings

#### Grease lubrication

- Grease functions and properties
- Grease delivery and metering systems
- Selection of grease type: choosing the right grade, base, stiffness, and oil for your application
- Compute grease intervals and relubrication amounts for a variety of application conditions, such as contamination, high or low temperatures, and vibration

#### Oil lubrication

- Choosing the right lubricant: oil and grease quality standards and testing
- Effects of cleanliness and contamination
- Using the new life theory to predict the effects of contamination on bearings
- Effects of water ingress
- Effective use of filtration and choosing the right filter
- Change-out intervals
- Bearing housing design concepts
- Comparison of oil delivery methods: static, wick-feed, lifting rings, circulating oil, mist, air-oil, oil spot
- Determining oil flow rates

#### Applying lubricants

- Determining lubrication quantities and intervals
- Hands-on lubrication and relubrication procedures for pillow blocks, ball bearings, roller bearings, sealed and shielded bearings
- Electric motor relubrication

#### Common errors/troubleshooting

- Over-greasing, under-greasing, and mixing greases
- Corrective actions

#### Other topics covered

- Standstill precautions, storing spare bearings, and shelf life considerations

#### Prerequisite

#### RMI On-line course\*

WE110 Lubrication  
WE140 Lubrication analysis basics

#### Reading material\*

NC\_03\_Lub101 Lubricants 101  
-Fundamentals of lubrication  
what they are and what they are not  
NC\_04001  
Electric motor lubrication  
NC\_03\_GreaseSelect  
Selecting a general purpose grease

\* On-line learning material at [aptitudeexchange.com](http://aptitudeexchange.com)