



Work Execution

WE303 Advanced Lubrication

Recommended for

Application engineers, sales engineers, product development engineers and factory engineers working with lubrication and lubricants. A working experience of 1–2 years is desirable, but also application engineers with 20 years experience have found this course very valuable.

Course objective

To provide students with the knowledge and the practical skills to select the best lubricant for a given application, and apply the best lubrication practice for this application.

2009 course schedule

Nov. 10–12 Philadelphia, PA

2009 tuition

Public classes \$1,195

On-site

per class	\$12,995
# people	16
17+ people	\$395 per person

3 days

Course description

This course provides the student with knowledge to:

- Have a thorough understanding of all performance aspects of oils and greases.
- Be able to select the best oil or grease for a given application in his/her working field using the product specifications, viscosity diagrams, etc. which are available from either SKF or major oil companies.
- Be familiar with updated methodologies for determining grease life and relubrication intervals, and be able to apply them in practice.
- Be able to determine if two lubricants are compatible with each other or with other bearing materials.
- Understand the role of additives in oils and greases, and be able to apply the knowledge for selecting the best lubricant.
- Know the meaning and use of a range of grease and oil tests, and how to use the test results for optimal grease selection.
- Understand how lubrication basically works, and apply this to assess effects of operating conditions on lubricant film thickness, kappa value, etc.
- Be familiar with some software programs on viscosity calculation, grease selection (LubeSelect), grease life calculation (LubeLife and DialSet), and grease performance (LuBase).

Key features

Oil and grease—The course deals with both grease and oil lubrication. Proper attention is given to grease lubrication, since this is the more complex issue to master. But oil lubrication is a major topic handled in the course.

Oils—Different oil types and their function in bearing lubrication. Viscosity calculations, viscosity dependence on temperature and pressure. Oil additives, their role and function.

Oil selection—The basic methodology of oil selection will be given.

Greases—Explanation of thickener types, base oils and additives, and the effects they have on grease performance in bearings.

Grease selection—Much time will be spent on mastering methodologies for selecting the best grease for a given application.

This selection methodology will cover both sealed and open bearings. Three practical methods will be given and practised.

Grease life—New and advanced grease life calculation methods will be explained and practiced, which take into account the improved performance of individual modern greases, and the effect of the operating conditions of the application.

Grease tests—The meaning of grease tests and how to apply test results for optimal grease selection.

Lubrication practice—Some practical guidelines on how best to apply greases and oils. Relubrication practice, danger of overfilling, etc. Lubrication-related bearing failure will also be discussed.

Knowledge—Basic lubrication theory will be discussed to understand how lubrication really works.

Prerequisite

RMI On-line course*

WE110 Lubrication
WI140 Lubrication analysis basics

Reading material*

Herguth_Physical and chemical properties of mineral oils
NC_0609 Lubricant specifications, what they are and what they are not
NC_03_GreaseSelect Selecting a general purpose grease
NC_04007 Designing a world-class lube room

* On-line learning material at aptitudeexchange.com