

This course can be adapted to virtual classroom mode

Introductory Course to Automotive & Industrial Lubricants

5 days
Overview

INILAI-EN-A

LEVEL

Awareness

PURPOSE

This course provides a deeper knowledge on the equipment being lubricated: internal combustion engines, automotive transmissions, industrial equipment (hydraulic pumps, gears, compressors, turbines, antifriction bearings, machine tools).

It presents the key elements needed to understand how the lubricants operate in the various equipment, as well as their functional properties for each type of equipment, their classifications and specifications.

LEARNING OBJECTIVES

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

master the technology of the automotive and industrial equipment currently used,

understand the various lubricants applied in the equipment in terms of functional properties, classifications and specifications,

recommend a lubricant for a given application.

WAYS AND MEANS

Interactive exercises of questions-answers between the participants using sets of play cards to synthesize the essential points of the lectures.

Agenda

ENGINE LUBRICANTS

1.25 d

Elements on engine technology in relation with lubricants properties.

Passenger car engine oils: role, properties, classifications and specifications (API, ACEA, ILSAC).

Industrial vehicle lubricants: role, properties, classifications and specifications (API, ACEA, ILSAC).

AUTOMOTIVE TRANSMISSION LUBRICANTS

0.75 d

Elements on automotive transmission technologies.

Automotive transmission oils (manual and automatic): role, properties, classifications and specifications.

HYDRAULIC LUBRICANTS

0.5 d

Basic hydraulic circuit. Elements on hydraulic equipment technology. Lubrication requirements of hydraulic circuits. Hydraulic oils properties, classifications and specifications. Recommending a hydraulic oil.

Hydraulic oils in use: maintenance in use, filtration, pump failures.

INDUSTRIAL GEAR LUBRICANTS

0.5 d

Elements on industrial gear technologies. Lubrication requirements of the various types. Industrial gear oil properties, classifications and specifications. Recommending an industrial gear oil. Industrial gear oils in use: maintenance, identification of failures.

COMPRESSOR LUBRICANTS

0.5 d

Gas compression principles. Different compressor types. Lubrication requirements according to compressor type and gas compressed. Lubricant functional properties for gas, air and refrigerating compressors. Compressor lubricants classifications and specifications. Recommending a product. Possible problems in service.

TURBINE LUBRICANTS

0.5 d

Elements on the different types of turbines (steam, gas, hydraulic). Lubrication requirements. Turbine lubricants functional properties, classifications and specifications. Recommending a lubricant. Possible problems in service.

PLAIN & ANTIFRICTION BEARING LUBRICANTS

0.5 d

Elements on plain and anti-friction bearings technologies. Lubrication requirements according to the type. Bearing oils and greases description, requirements, classifications and specifications. Recommending a bearing oil or grease. Bearing failures: identification, origin and solutions.

MACHINE-TOOLS LUBRICANTS

0.5 d

Description and role of machine tools - Elements on the different constituting organs. Lubrication requirements, putting more emphasis on slide-ways lubrication. Lubrication scheduling. Possible problems in service.