

BEARING FUNDAMENTALS

eLearning courses designed to increase productivity and profits



Learning made Simple, Visual, and Interactive

Bearing Fundamentals introduces learners to the basic components, considerations, and types of bearings used in the industry. In this course, there are multiple ways in which the fundamentals of bearings are presented such as with 3D animations, 3D/2D models, and GIFs. This course contains material which is suitable for those new to bearings and those who have experience in the industry.

Credit Hours **2.5**

Learning Objectives

- Understand the basic functions and primary components of bearings.
- Recognize the impact of motion on various bearing applications.
- Comprehend the ways in which friction presents challenges that bearings must overcome.
- Differentiate between the various types of load that bearings must withstand.
- Recognize the common bearing types, along with prominent characteristics for each type.
- Recall the common defects for bearing applications and ways in which to minimize the defects.

Table of Contents

I. Introduction to Bearing Concepts

- Components of a Bearing
- Motion
- Friction
- Load
- Special Features
 - Shield
 - Sensor
 - Flange
 - Keyway
 - Holes
- Clearance and Fitting

II. Bearing Types

- Plain Bearings
- Rolling Element Bearings
 - Ball Bearings
 - Cylindrical Roller Bearings
 - Spherical Roller Bearings
 - Tapered Roller Bearings
 - Needle Roller Bearings
- Specialized Bearings
 - Fluid Bearings
 - Magnetic Bearings

III. Defects and Failures

- Material Defects
 - Cracks
 - Non-Metallic Inclusions
- Bearing Failure
 - Lubricant Failure
 - Corrosion and Wear
 - Foreign Material
 - Misalignment
 - False Brinell

