

# Measurement Systems Analysis Course Objectives

## Unit 1 | Analyzing Measurement System Variation

In this unit, you will cover the techniques for analyzing the variation contained within a measurement system itself. After completing this Unit, you should be able to:

- Know the common sources of measurement system variation.
- Understand both Type A and Type B evaluations of measurement uncertainty.
- Use both graphical and mathematical techniques to evaluate gage or instrument linearity and stability, and initiate action to address linearity or stability issues.
- Know how to plan and conduct a GR&R study.
- Perform R&R analysis for non-destructive measurements, for destructive measurements, and for attribute measurements.
- Use ANOVA and graphical techniques for the R&R analysis.
- Use the GR&R data to initiate action to improve the measurement device's repeatability and reproducibility.

## Unit 2 | Managing Measurement Systems

In this unit you will learn about the importance of measurement device calibration management. Upon completion of this unit you will be able to:

- Explain the importance of calibration and management.
- Describe the primary sources of measurement error.
- Show how the calibration of a measurement device is tied to ISO standards.
- Specify your requirements for measurement instrument management software, if you choose to computerize your records.