



# Measurement

## Statistical Methods for Improving Measurement Systems

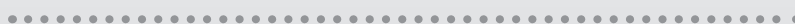
All statistical methods for design, improvement, and control of processes rely on a measurement system. Without a measurement system that is controlled and capable, one cannot "see" the process. This four-day seminar presents practical methods for evaluating, controlling, and improving measurement systems.

### Who Should Attend

Participants should include laboratory managers, supervisors, analysts, test engineers or technicians, and engineering or production personnel involved in taking measurements and designing measurement systems.

### Course Topics

- ◆ The need for measurement control and improvement
- ◆ How to define measurement procedures in terms of a system
- ◆ QualPro's 12-Step MVT® Process
- ◆ Measurement capability studies
- ◆ Accuracy and precision assessment and detection of bias
- ◆ Measurement capability indexes
- ◆ Comparison of two measurements, methods, machines, etc.
- ◆ Problems of physical sampling
- ◆ Use of standards
- ◆ Components of precision
  - ◆ Repeatability and reproducibility studies of gage variation and operation contribution
  - ◆ Assessment of sampling variation
  - ◆ Calibration techniques
- ◆ Interlaboratory comparisons
  - ◆ Problems of round robins
  - ◆ Recommended procedures for analysis of interlaboratory test results
- ◆ Basic experimental design techniques to improve precision



**Call 865-927-0491 or email [info@qualproinc.com](mailto:info@qualproinc.com) to learn more.**