

Metrology for the Rest of Us

A One-Day Seminar



What every Manager, Engineer and Technician needs to know about their Measurements Systems!

Six fundamental Measurement Systems questions whose answers impact both your customer satisfaction and your bottom line!

1. What is the difference between metrology and calibration?
2. What are the six key design components of a measurement system?
3. What capability, traceability and stability does your measurement system have to have?
4. How do you know if your system has the right capability, traceability and stability?
5. What are the sources of measurement variation?
6. **And, most importantly, how does your measurement system impact product quality and product yield?**

If you are unsure, or don't know the answers to all of these questions, then this seminar is for you!

This one-day course will give the participant a comprehensive view of the critical elements of a measurement system – design requirements, system capability, measurement variation, calibration, standards and traceability. Students will engage in several small group exercises along with instructor-led discussions to gain the knowledge they will need to effectively use and manage their measurement systems.

Key Features and Benefits:

- ... Gain a greater understanding of the impact of metrology and calibration on product quality
- ... Enhance your ability to communicate in the language of measurements (accuracy, precision, repeatability, bias, uncertainty)
- ... Increase your confidence in asking the right questions about your measurement system and in understanding the responses to those questions
- ... Learn what to look for when assessing measurement system performance
- ... **Develop a more complete understanding of the key "bottom line" role played by Metrology and Calibration**

Course Outline

Understanding the Measurement System/Process

- Measurement Principles
- Measurement System Design Requirements
- Key measurement components
 - ... Capability
 - ... Traceability
 - ... Stability
- Specifications

Language of Measurements

- Metrology Disciplines
- Accuracy, Precision and Bias
- Types of Data
- Math Concepts for Measurement Analysis

Calibration

- Calibrations Process
- "As Found" and "As Left" Values
- Calibration Methods
- Calibration Intervals
- Calibration Certificates and Reports

Standards and Traceability

- Definition of Standards
 - ... Calibration
 - ... Control
 - ... Check
- Hierarchy of Standards
- Purpose of Traceability
- NIST Policy on Traceability
- Traceability Requirements

Measurement System Impact on Product Quality and Product Yield

- Understanding Measurement Variation
- The difference between Product Variability, Measurement Variation
- Measurement Uncertainty
- ISO Equation for calculating Measurement Uncertainty
- Determining measurement uncertainty impact on product quality

August 16, 2007, Albuquerque, New Mexico

Course Fee - \$495.00/person

Team discount – Three for the price of two

To register and for more information contact us at www.jtisystems.com, rick@jtipmap.com or (505) 710- 4999