MEASUREMENT SYSTEM ASSESSMENT (MSA)





A capable measurement system will enhance the effectiveness and efficiency in implementing any process control programme and improvement initiatives because the actual variables of interest now lies directly with the processes itself.

The methodology adopted for MSA is referenced to AIG-MSA and AS13003.

This course will enable the participants to:

Objectives

• Understand the fundamental principle of measurement system and its effect and impact on the quality of measurement data and the accuracy of the process analysis.

- Identify the types of variations influencing the measurement system performance.
- Acquire the use of statistical techniques, skills and ability to assess the measurement system.
- Select the appropriate statistical methods for evaluating the measurement system in different environments.



3days | 9am - 5pm | 21 hours

This course is particularly suitable for and benefit to Engineers, Supervisors, Process Specialists or any personnel involve in quality assurance, process control and improvement activities.

Member: S\$ 962.28 Non-Member: S\$ 1069.20 Registration Fee of S\$17.28 apply SDF funding & SkillsFuture applicable All fees stated are inclusive of 8% GST

Certificate of Completion will be issued to participants who have attended at least 75% of the course.





+65-6467 4225

1 Sophia Road #05-06/07 Peace Centre S(228149)

Course Contents

1 1.1 1.2 1.3 1.4 1.5 1.6	Main Concept of Measurement System Introduction, Purpose and Terminology Quality of Measurement Data The Measurement Process Statistical Properties of Measurement Systems Standards: Background and Use of Standards Purpose of Calibration & Calibration Systems	6 6.1 6.2 6.3 7 7.1 7.2
2 2.1 2.2 2.3 2.4 2.5	Types of Measurement System Variation Source of Variations Bias Repeatability Reproducibility Stability	7.3 7.4 7.5 7.6 8 8.1
2.6 3	Linearity Computation Techniques Associated with GR&R	8.2 8.3
4 4.1 4.2	Analysis of A Measurement System Measurement System Discrimination Process Variation – Location	9
4.2 4.3 4.4	Process Variation – Width or Spread Analysis of Measurement System's Variability using Work Examples: Bias / Repeatability / Reproducibility / Stability / Linearity	10 10.1 10.2 10.3 10.4



Please refer to this URL https://www.sqi.org.sg/courses/ or QR Code for soft copy and updated training schedule

Membership Application

Register membership online at www.sqi.org.sg/membership-join/ or contact us to get the membership application form.

Membership Categories:

- ~ Organisation membership
- ~ Individual membership

Assessing Measurement Systems Selecting and Developing Test Procedures Preparation for a Measurement System Study Variable Measurement System Study Guidelines for Determining Repeatability and Reproducibility: Range Method, Average and Range method, Standard GR&R Study, Analysis of Variance (ANOVA) method. Attribute Measurement System Study Attribute Gage Study (Go/No Go Method) Visual Standard: Based on Percentage of "Correct Decision"-Effectiveness / Miss Rate / False Alarm Rate.Visual Standard: Based on "Inter-raters Agreement" In Terms of Cohen's Kappa Value Method for Reducing Unacceptable GR&R Result Application of Calibration Techniques In Measurement System Measurement Error vs Measurement Uncertainty Calibration System / Measurement Traceability

- Major Categories of Calibration
- Review and Discuss Certificate of Calibration
- Determination of Calibration Interval

Impact of GR&R on Process Capability Studies

Interpretation 8 Application of Drasses Conshills, Chudios
Interpretation & Application of Process Capability Studies
Computation of Estimated Process Standard Deviation Calculation
of Process Capability Index

Class-room Assignment and Exercises

Case Study: Impact of GR&R on Process Capability Studies

SQI International is a subsidiary of Singapore Quality Institute (SQI). SQI operates as a non-profit professional institute that promotes and advances excellence in the field of quality in Singapore; and actively champions quality initiatives in the region and around the world through networking and collaborating with other international quality organisations.

SQI is a World Partner of the American Society for Quality (ASQ); and a Board Member of both the Asian Network for Quality (ANQ) and the World Alliance for Chinese Quality (WACQ).









