# MEASUREMENT SYSTEM ANALYSIS (MSA) TRAINING

**Course Title:** Measurement System Analysis (MSA) Training

**Course Validity:** 2 Days

**Validity:** Not Applicable

**HRD Corp Scheme:** Claimable

## INTRODUCTION

This 2-day training program provides participants with the skills to assess and improve the accuracy and reliability of measurement systems. Measurement System Analysis (MSA) focuses on evaluating measurement tools, techniques, and variability to ensure data integrity and informed decision-making.

## OBJECTIVE(S):

- Understand the purpose and importance of Measurement System Analysis (MSA).
- Learn the types of measurement system errors and their impact on data accuracy.
- Develop skills to perform key MSA studies, including Gage R&R (Repeatability & Reproducibility).
- Gain knowledge of best practices to maintain consistent and reliable measurement systems.
- Promote a data-driven culture with precise measurement systems for quality improvement.

## TARGET GROUP(S):

- Quality assurance and control personnel.
- Engineers and production managers.
- Supervisors and team leaders.
- Employees involved in measurement and data analysis.

**ENTRY REQUIREMENT(S):**

- Able to read, write, and communicate verbally in Malay/English.

**TOPIC(S):**

1. Introduction to Measurement System Analysis (MSA).

2. Types of Measurement System Errors.

3. Conducting Gage R&R Studies.

4. Evaluating Bias, Linearity, and Stability.

5. Practical Applications of MSA in Quality Improvement.

**LIST OF REFERENCE BOOK(S):**

- AIAG MSA Manual.

- "Measurement System Analysis: Methods and Applications" by B. Krishnamoorthi.

**LIST OF TEACHING AID(S):**

- Measurement system evaluation templates and worksheets.

- Statistical software (e.g., Minitab, Excel).

- LCD projector and computer.

- Whiteboard with accessories.

**METHODOLOGY(S):**

- Lecture.

- Group discussions and brainstorming sessions.

- Hands-on exercises on Gage R&R studies.

- Case study analysis on improving measurement systems.

**TRAINING SCHEDULE**

**Day 1**

| Time | Activity/Topic |
|---|---|
| 8:30 am - 9:00 am | Registration and Introduction |
| 9:00 am - 10:30 am | Topic 1: Introduction to Measurement System Analysis (MSA) |
| 10:30 am - 10:45 am | **Morning Tea Break** |
| 10:45 am - 12:30 pm | Topic 2: Types of Measurement System Errors |
| 12:30 pm - 1:30 pm | **Lunch Break** |
| 1:30 pm - 3:30 pm | Topic 3: Conducting Gage R&R Studies |
| 3:30 pm - 3:45 pm | **Afternoon Tea Break** |
| 3:45 pm - 5:00 pm | Practical Exercise: Gage R&R Study Example |

# MTBM

**TRAINING SCHEDULE**

**Day 2**

| Time | Activity/Topic |
|---|---|
| 8:30 am - 9:00 am | Recap of Day 1 |
| 9:00 am - 10:30 am | Topic 4: Evaluating Bias, Linearity, and Stability |
| 10:30 am - 10:45 am | **Morning Tea Break** |
| 10:45 am - 12:30 pm | Topic 5: Practical Applications of MSA in Quality Improvement |
| 12:30 pm - 1:30 pm | **Lunch Break** |
| 1:30 pm - 3:30 pm | Practical Exercise: Analyzing Measurement System Data |
| 3:30 pm - 3:45 pm | **Afternoon Tea Break** |
| 3:45 pm - 5:00 pm | Case Study: Successful MSA Implementation |