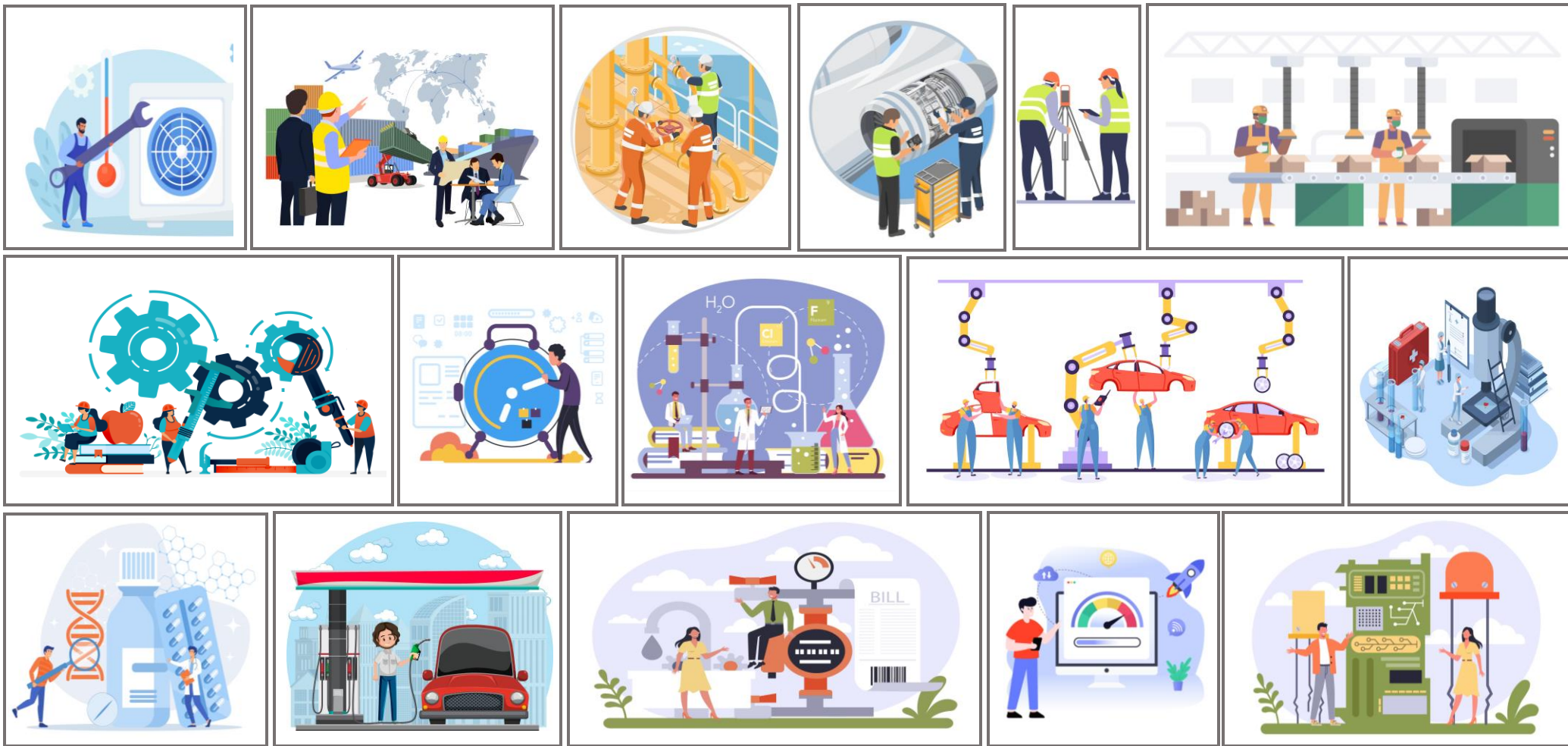


# METROLOGY

## *TRAINING COURSE PLANNER*

### 2024



# METROLOGY

## TRAINING COURSE PLANNER 2024

[illegible]



# METROLOGY

## TRAINING COURSE PLANNER 2024

| Module    | Training Course Title   | Fee/person (RM) | Duration Day(s) | Month |                |     |     |     |          |          |                |        |          |             |     |
|-----------|---|-----------------|-----------------|-------|----------------|-----|-----|-----|----------|----------|----------------|--------|----------|-------------|-----|
|           |   |                 |                 | Jan   | Feb            | Mar | Apr | May | Jun      | Jul      | Aug            | Sep    | Oct      | Nov         | Dec |
| Flow      | Petroleum storage tank calibration  | 1300            | 1               |       | 19             |     |     |     |          |          |                |        |          | 4           |     |
|           | Liquid flow measurement   | 3100            | 3               |       | 20<br>21<br>22 |     |     |     |          |          |                |        |          | 5<br>6<br>7 |     |
|           | Prover tank calibration   | 1300            | 1               |       | 23             |     | 23  |     |          |          | 6              |        |          | 8           |     |
|           | Calibration of volumetric apparatus   | 1300            | 1               |       |                |     | 24  |     | 11       |          |                | 10     |          |             |     |
|           | Measurement uncertainty of volumetric apparatus   | 1100            | 1               |       |                |     | 25  |     | 12       |          |                | 11     |          |             |     |
|           | Calibration of air speed anemometer and Measurement uncertainty of air speed anemometer | 1300            | 1               |       |                |     |     | 7   |          | 16       |                | 12     |          |             |     |
|           | Micropipette Calibration  | 1300            | 1               |       |                |     |     | 14  |          | 17       |                |        | 9        |             |     |
| Chemistry | Measurement uncertainty for chemical analysis   | 2100            | 2               |       | 6<br>7         |     |     |     | 12<br>13 |          |                | 3<br>4 |          |             |     |
|           | Measurement uncertainty for chemical uncertainty (with consultation)                    | 3500            | 3               |       | 13<br>14<br>15 |     |     |     |          |          | 12<br>13<br>14 |        |          |             |     |
|           | Standard addition by gravimetric method   | 1200            | 1               |       |                |     | 23  |     |          |          |                |        |          |             |     |
|           | Training on statistics for chemist  | 1200            | 1               |       | 20             |     |     |     |          |          |                |        |          |             |     |
|           | Analytical method validation  | 2100            | 2               |       | 5<br>6         |     |     |     |          | 17<br>18 |                |        | 16<br>17 |             |     |
|           | Determination of rice moisture meter by drying oven method                              | 2100            | 1               |       | 7              |     | 24  |     | 26       |          |                |        |          | 13          |     |

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|-----------|---|-----------------|-----------------|-------|----------------|-----|-----|--------|----------------|-----|-------------|-------------|-----|-------------|-----|
|           |   |                 |                 | Jan   | Feb            | Mar | Apr | May    | Jun            | Jul | Aug         | Sep         | Oct | Nov         | Dec |
| Chemistry | Elemental analysis using energy dispersive x-ray fluorescence (EDXRF)   | 1100            | 1               |       | 6              |     |     | 14     |                |     | 6           |             | 8   |             |     |
|           | Calibration and measurement of gas analyser   | 600             | 1               |       | 7              |     |     | 15     |                | 15  |             | 3           |     |             |     |
|           | pH measurement principles and best measurement practices  | 1100            | 1               |       |                |     | 17  | 16     |                |     | 13          |             | 9   |             |     |
|           | Basic principle and operation of Gas Chromatography Mass Spectrometry   | 2300            | 1               |       | 13             |     | 23  |        | 11             | 16  |             | 10          |     |             |     |
|           | Principle and operation of Gas Chromatography (Theory)  | 2300            | 1               |       | 20             |     | 24  |        | 12             | 17  |             | 11          |     |             |     |
|           | Principle and operation of Gas Chromatography (Practical)   | 2300            | 1               |       | 21             |     | 25  |        | 13             | 18  |             | 12          |     |             |     |
|           | Calibration of high purity organic substances by quantitative NMR (Theory)  | 1100            | 1               |       |                |     | 30  |        | 11             |     | 15          |             | 16  |             |     |
|           | Reference material production based on ISO 17034 and Guide 35   | 3100            | 3               |       | 26<br>27<br>28 |     |     |        | 11<br>12<br>13 |     |             | 3<br>4<br>5 |     |             |     |
|           | ISO/IEC 17043:2010 - General requirements for proficiency testing for chemical  | 2100            | 2               |       |                |     |     |        |                |     | 20<br>21    |             |     |             |     |
|           | Implementation of ISO/IEC 17043 based on ISO 13528: Statistical methods for proficiency testing by interlaboratory comparison | 3100            | 2               |       |                |     |     | 7<br>8 |                |     |             |             |     | 19<br>20    |     |
|           | Primary Method Development Isotope Dilution Mass Spectrometry (IDMS) in Inorganic Analysis (Theoretical)                      | 2400            | 2               |       | 19<br>20       |     |     |        |                |     | 5<br>6      |             |     | 4<br>5      |     |
|           | Primary Method Development Isotope Dilution Mass Spectrometry (IDMS) in Inorganic Analysis (Practical)                        | 3500            | 3               |       | 21<br>22<br>23 |     |     |        |                |     | 7<br>8<br>9 |             |     | 6<br>7<br>8 |     |

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|------------|---|-----------------|-----------------|-------|-----|-----|----------------|--------|-----|-----|----------------|----------|-----|-----|-----|
|            |   |                 |                 | Jan   | Feb | Mar | Apr            | May    | Jun | Jul | Aug            | Sep      | Oct | Nov | Dec |
| Mechanical | Measurement Uncertainty Evaluation of Mass Standard Calibration - Classes E2 and below              | 1500            | 1               |       | 6   |     |                | 28     |     | 16  |                | 3        |     |     |     |
|            | Calibration of Mass Standards (OIML Classes E2 and Below)   | 1300            | 1               |       | 7   |     |                | 29     |     | 17  |                | 4        |     |     |     |
|            | Calibration of Weighing Balances  | 1300            | 1               |       |     |     | 17             |        | 11  |     | 6              |          | 8   |     |     |
|            | Measurement Uncertainty Evaluation of Weighing Balance Calibration                                  | 1500            | 1               |       |     |     | 18             |        | 12  |     | 7              |          | 9   |     |     |
|            | Calibration of Weighbridge Using Substitution Method  | 2500            | 1               |       |     |     |                | 7      |     |     |                | 10       |     |     |     |
|            | Measurement Uncertainty Evaluation of Weighbridge Calibration Using Substitution                    | 2200            | 2               |       |     |     |                | 8<br>9 |     |     |                | 11<br>12 |     |     |     |
|            | Verification of Weighbridge Using Substitution Method (ASEAN Guidelines)                            | 3600            | 1               |       |     |     | 16             |        | 25  |     |                |          |     | 5   |     |
|            | Verification Of Non-Automatic Weighing Instruments, NAWI (excluding Weighbridge) - ASEAN Guidelines | 3600            | 1               |       | 20  |     |                |        |     | 25  |                |          |     | 20  |     |
|            | Determination of Pre-Packaged Products According to ASEAN Common Requirements                       | 5100            | 3               |       |     |     | 23<br>24<br>25 |        |     |     | 13<br>14<br>15 |          |     |     |     |
|            | Good Measurement Practice of Weighing Balances  | 2400            | 1               |       |     |     |                |        |     | 2   |                |          | 15  |     |     |
|            | Calibration of gauge block using gauge block comparator   | 2300            | 1               |       |     |     |                |        |     | 3   |                |          | 16  |     |     |

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|------------|--|-----------------|-----------------|-------|----------|-----|----------|----------|----------|--------|----------|----------|----------|--------|-----|
|            |  |                 |                 | Jan   | Feb      | Mar | Apr      | May      | Jun      | Jul    | Aug      | Sep      | Oct      | Nov    | Dec |
| Mechanical | Measurement uncertainty evaluation for calibration of gauge block                    | 1500            | 1               |       | 14       |     |          |          | 5        |        |          | 5        |          |        |     |
|            | Calibration of micrometer  | 1800            | 2               |       | 6<br>7   |     |          |          | 11<br>12 |        | 6<br>7   |          | 2<br>3   | 6<br>7 |     |
|            | Calibration of caliper   | 1800            | 2               |       |          |     | 16<br>17 | 13<br>14 |          | 2<br>3 |          | 3<br>4   | 8<br>9   |        |     |
|            | Calibration of dial gauge  | 1800            | 2               |       | 20<br>21 |     | 18<br>19 |          | 24<br>25 |        | 13<br>14 | 24<br>25 |          |        |     |
|            | Calibration of height gauge  | 1800            | 2               |       |          |     | 23<br>24 |          | 26<br>27 |        |          |          | 22<br>23 |        |     |
|            | Measurement uncertainty evaluation for calibration of dimensional small tools        | 1500            | 1               |       | 8        |     |          | 8        |          | 15     |          |          |          |        |     |
|            | Calibration of ring gauge/plug gauge (contact method)                                | 1800            | 1               |       |          |     |          | 6        |          | 16     |          | 10       |          |        |     |
|            | Calibration of Threaded Ring Gauge/plug gauge (contact method)                       | 1800            | 1               |       |          |     |          | 7        |          | 17     |          | 11       |          |        |     |
|            | Calibration of surface roughness specimen/portable surface roughness tester          | 1800            | 1               |       | 27       |     |          | 28       |          | 23     |          |          |          |        |     |
|            | Measurement uncertainty evaluation for calibration of surface roughness specimen     | 1500            | 1               |       | 28       |     |          | 29       |          | 24     |          |          |          |        |     |
|            | Measurement uncertainty evaluation for calibration of ring gauge/threaded ring gauge | 1500            | 1               |       |          |     |          | 9        |          | 11     |          | 12       |          |        |     |



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|------------|--|-----------------|-----------------|-------|-----|-----|----------------|----------|----------------|----------|-------------|-----|----------|----------------|-----|
|            |  |                 |                 | Jan   | Feb | Mar | Apr            | May      | Jun            | Jul      | Aug         | Sep | Oct      | Nov            | Dec |
| Mechanical | Calibration of line scale (measurement of ruler/tape)  | 1800            | 1               |       | 6   |     |                | 7        |                |          |             |     | 16       |                |     |
|            | Measurement uncertainty evaluation for calibration of line scale                                     | 1500            | 1               |       | 7   |     |                | 8        |                |          |             |     | 17       |                |     |
|            | Calibration of angle instruments   | 2500            | 2               |       |     |     |                |          | 25<br>26       |          |             |     |          | 4<br>5         |     |
|            | Measurement uncertainty evaluation for calibration of angle instruments                              | 1500            | 1               |       |     |     |                |          | 27             |          |             |     |          | 6              |     |
|            | Measurement uncertainty evaluation for calibration of length & dimensional instruments using ISO GUM | 2500            | 1               |       | 28  |     |                | 30       |                |          | 21          |     |          |                |     |
|            | Fundamental of pressure measurement instrument calibration   | 4400            | 3               |       |     |     | 16<br>17<br>18 |          | 11<br>12<br>13 |          | 5<br>6<br>7 |     |          | 18<br>19<br>20 |     |
|            | Comprehensive measurement uncertainty evaluation for pressure instrument                             | 2500            | 1               |       |     |     |                | 15       |                |          | 8           |     |          | 21             |     |
|            | Verification of sphygmomanometer   | 2500            | 1               |       | 21  |     |                |          | 20             |          |             | 11  |          |                |     |
|            | Calibration of force measuring devices   | 2500            | 2               |       |     |     | 23<br>24       | 28<br>29 |                | 16<br>17 |             |     | 22<br>23 |                |     |
|            | Measurement uncertainty evaluation of force calibration  | 1100            | 1               |       |     |     | 25             | 30       |                | 18       |             |     | 24       |                |     |

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|----------------|--|-----------------|-----------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                |  |                 |                 | Jan   | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Thermophysical | Measurement and calibration of liquid-in-glass thermometer                                       | 1300            | 1               |       | 27  |     |     |     | 12  |     |     |     | 10  |     |     |
|                | Measurement uncertainty evaluation for calibration of liquid-in-glass thermometer                | 1100            | 1               |       | 28  |     |     |     | 13  |     |     |     |     | 4   |     |
|                | Measurement and calibration of industrial platinum resistance thermometer                        | 1300            | 1               |       | 20  |     |     |     |     | 10  |     |     |     |     |     |
|                | Measurement uncertainty evaluation for calibration of industrial platinum resistance thermometer | 1100            | 1               |       | 21  |     |     |     |     | 11  |     |     |     |     |     |
|                | The understanding of Temperature Measurement   | 1250            | 1               |       |     |     | 24  | 16  |     |     | 8   |     | 17  |     |     |
|                | Theory & principle in Resistance Thermometry   | 1250            | 1               |       |     |     | 30  | 9   | 20  |     | 22  |     |     |     |     |
|                | Theory & principle in Liquid In Glass Thermometry  | 1250            | 1               |       |     |     |     | 23  |     | 31  |     | 19  |     | 21  |     |
|                | Calibration of Refrigerators and Freezers  | 1300            | 1               |       |     |     |     |     |     |     |     | 25  |     | 27  |     |
|                | Measurement Uncertainty Evaluation of Calibration of Refrigerators and Freezers                  | 1100            | 1               |       |     |     |     |     |     |     |     | 26  |     | 28  |     |
|                | Measurement and calibration of radiation thermometer   | 1300            | 1               |       | 6   |     |     | 21  |     |     | 7   |     | 15  |     |     |
|                | Measurement uncertainty evaluation for calibration of radiation thermometer                      | 1100            | 1               |       | 7   |     |     | 22  |     |     | 8   |     | 16  |     |     |



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|----------------|---|-----------------|-----------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                |   |                 |                 | Jan   | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Thermophysical | Measurement and calibration thermocouple thermometry                          | 1300            | 1               |       | 6   |     | 22  |     | 7   |     |     | 20  |     |     |     |
|                | Measurement uncertainty evaluation of thermocouple thermometry                | 1100            | 1               |       | 7   |     | 23  |     | 8   |     |     | 21  |     |     |     |
|                | Calibration and testing of heat enclosure                                     | 1300            | 1               |       | 28  |     |     | 31  |     | 11  |     | 20  |     |     |     |
|                | Measurement and calibration of humidity                                       | 1300            | 1               |       | 26  |     |     |     | 6   |     | 7   |     | 17  |     |     |
|                | Uncertainty evaluation of humidity measurement                                | 1100            | 1               |       | 27  |     |     |     | 7   |     | 8   |     | 18  |     |     |
|                | Measurement and calibration of hydrometer                                     | 1300            | 1               |       | 21  |     |     |     |     | 21  |     |     |     |     |     |
|                | Measurement uncertainty evaluation for calibration of hydrometer              | 1100            | 1               |       | 22  |     |     |     |     | 22  |     |     |     |     |     |
|                | Measurement and calibration of viscosity                                      | 1300            | 1               |       |     |     | 24  |     | 11  |     | 20  |     | 19  |     |     |
|                | Measurement uncertainty evaluation of viscosity calibration                   | 1100            | 1               |       |     |     | 25  |     | 12  |     | 21  |     | 20  |     |     |
|                | Measurement and calibration of density meter                                  | 1300            | 1               |       |     |     |     | 22  |     |     |     |     |     | 20  |     |
|                | Measurement uncertainty evaluation for calibration of density meter           | 1100            | 1               |       |     |     |     | 23  |     |     |     |     |     | 21  |     |
|                | Measurement and calibration density of coriolis flow meter <span>[New]</span> | 1300            | 1               |       |     |     |     | 9   |     |     |     |     |     | 7   |     |

# REGISTRATION FORM



## METROLOGY TRAINING COURSE 2024

To:

**Nik Marzuriani binti Nik Mohamed**

Consultant

Metrology Support and Advisory Group

National Metrology Institute of Malaysia (NMIM)

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[NMIMtraining@sirim.my](mailto:NMIMtraining@sirim.my)

**COURSE CODE**

**COURSE DATE**

|  |  |
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Please register the following name(s) for the training course(s).

(Please attach a list of names if more than 5 participants attending)

| No. | Name of Participant | Designation |
|-----|---------------------|-------------|
| 1.  |                     |             |
| 2.  |                     |             |
| 3.  |                     |             |
| 4.  |                     |             |
| 5.  |                     |             |

**Submitted by:**

|                      |                                 |                 |
|----------------------|---------------------------------|-----------------|
| <b>Name :</b>        | <b>Company / Organization :</b> |                 |
| <b>Designation :</b> | <b>Address :</b>                |                 |
| <b>Tel :</b>         | <b>Fax :</b>                    | <b>E-mail :</b> |