

VICE DIRECTORATE OF PHYSICAL METROLOGY

Course: Direct & Alternating Current Metrology

Intended for:

Technicians, technologists, and professionals with knowledge of physics, mathematics, electricity, and electronics and who perform activities related to electrical metrology.

Identification:

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| Course name | Direct & Alternative Current Metrology | Course duration | Three (3) days – 24 hours |
| Minimum # of slots | Five (5) people | Maximum # of slots | Nine (9) people |
| Place | The courses are taught in the Instituto Nacional de Metrología, located on Avenida Carrera (AK) 50 No. 26-55, Int 2 (CAN), Bogotá D.C. | Cost | Resolution & current rate |
| For information & registration: www.inm.gov.co link http://www.inm.gov.co/index.php/serviciosinm/capacitacion Tel. (571) 254 22 22 extensions 1417 & 1428 | | | |

Course Objective:

Learn the traceability of measurements in electrical magnitudes, the different measurement standards and some of their most important characteristics, learn basic concepts for the calibration of electrical equipment that involves quantities such as continuous voltage, alternating voltage for low frequency (values less than 1 MHz), direct current, alternating current for low frequency and resistance.

Course Content:

Day One:

1. Introduction
2. Generalities: global metrology structure, International System of Units (SI), review of some terms from the International Vocabulary of Metrology (VIM)
3. Definition, realization & reproduction of electrical units
4. Measurement standards in electrical quantities
5. Characteristics of electrical measurement instruments
6. Measurement methods used in the calibration of electrical equipment

Day Two

1. Application and interpretation of "accuracy specifications"
2. Causes of errors in electrical measurements and important considerations for measurements in electrical quantities
3. Laboratory visit
4. Demonstrations to show errors in electrical measurement and how to mitigate them
5. Estimating uncertainty

Day Three

1. Go over EURAMET Guide cg-15 on the calibration of digital multimeters
2. Calibration practices and results sharing

Requirements

Participants should:

- Have taken the Basic Metrology Course
- Have taken the Measurement Uncertainty Course
- Have a laptop computer, or in its absence, a scientific calculator

Important Information

In the event of partial attendance (missing more than 20% of the course) on the part of the participant, the INM will not award an "Attendance Certificate" or refund money from the course payment.

The courses are taught in the Instituto Nacional de Metrología located on Avenida Carrera (AK) 50 No. 26-55, Int 2 (CAN), Bogotá D.C., from 8:15 to 17:00 hours.

Users should consult about the availability of space before depositing payment: Tel. (571) 254 22 22 extensions 1417 & 1428.