



## Electrical Power & Energy Meter Calibration Basics

### Aim of Course

This course has been designed to build on the Electrical (DC/LF) Metrology Part 1 course and provides metrologists who operate in this field with some knowledge on the challenges of calibrating Domestic as well as Industrial Power and Energy meters. This course has also been designed so that it can stand-alone and be used by Municipalities and Utilities who want to understand the basic functioning and calibration considerations of Power and Energy meters. The course will briefly discuss the concept of uncertainty of measurement specifically related to these measurements.

### Pre-Requisites for attending this course

Whilst it is not a pre-requisite to do the following, it is highly recommend to attend the following courses especially if the student will be involved in the calibration of Electrical Power and Energy meters.

- Electrical (DC/LF) Metrology Part 1 (strongly recommended)

### Course Overview

- Basic electrical circuits, Ohms law
- AC circuits, power factor, phase angles, capacitance and inductance
- Accuracy and interpretation of Specifications, Test Accuracy concepts, RSA regulations
- Measuring Power theory, connections, analog meters, digital meters
- Measuring Energy theory, connections, electro-mechanical & static (electronic) kWh meters
- Reference Wh meters and their use, lab & field calibration considerations
- Measurement Uncertainty contributors for these calibrations

*(Includes some practical demonstrations)*

### Who should attend

Calibration technicians, metrologists and physical testing laboratory personnel who have the required pre-requisites (see above) and who wish to further develop their knowledge and skills in this area of metrology. In addition personnel from Municipalities and Utilities who want to have a better understanding of the operation and calibration of these instruments.

### Course Duration

5 Days

### Evaluation

Students are evaluated on attendance, daily tests and the passing of a final examination. The daily tests account for 30% of the final marks and the examination accounts for 70% of the final marks.

The examination will be written approximately two weeks after the completion of the course.

