



TEMPERATURE METROLOGY – PART 1

Aim of Course

This course forms the basic building block for personnel who wish to gain a fundamental knowledge and background in making traceable measurements in the temperature field. It serves as an introduction to the fundamentals of Temperature Metrology, which is the science of accurate measurements

Whilst the course has an emphasis on making measurements in a calibration environment, it is equally useful to anybody that is required to make accurate measurements in the field or process plant application as it will make the student aware of what is required to get an accurate measurement and what precautions to take to ensure the readings are reliable.

Pre-Requisites for attending this course

- Introduction to Measurement (strongly recommended)
- Method Validation (Calibration) (strongly recommended)

Course Overview

In this course we explore the fundamentals of temperature measurements starting with the basic fundamentals, covering the temperature scales and then exploring the various temperature measuring devices such as Liquid in Glass, Thermocouples, Resistance devices (PRTs, PT100s, etc.). Electrical Simulation (process calibrators) will be addressed and their role explained. Heat sources and typical problems will be briefly covered. Infra-red Thermometry and Thermography are introduced. We also touch on the principles of uncertainty of measurement and what to consider at this level of measurement accuracy.

Where possible, practical exercises will be done.

Course requirements

Attendees are expected to have an understanding of the basics of electricity, e.g. Voltage, Current, and Ohm's Law, etc.

A scientific calculator (such as a Sharp EL 531 or similar) must be brought by each student. (Pens, Paper, Course notes, Tea/Coffee and Lunch will be provided). Arrangements can normally be made for special dietary requirements but please advise the NLA-SA at least a week before the course is due to start.

Who should attend?

Electricians, instrumentation & process control technicians, metrologists and testing laboratory personnel.

Course Duration

5 Days

Evaluation

Attendance of the course, daily tests and the passing of a final examination are required (counting typically 30% for Daily tests and 70% for the Final Exam) in order to successfully complete this course.

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

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