



TEMPERATURE MEASUREMENT

This three-day course covers the measurement of temperature and the calibration of temperature measuring instruments. It incorporates extensive hands-on practical exercises.

Course Objectives

The course provides participants with knowledge and skills to:

- understand the principles of operation of common temperature sensors and their instrumentation, especially thermocouples and resistance, radiation and liquid-in-glass thermometers
- employ suitable processes for calibrating and using temperature measurement equipment
- identify various sources of error that affect temperature measurements
- develop the technical understanding required to become a NATA signatory

Course Outline

The topics covered include:

- physics of temperature measurement
- temperature scale, traceability and international standards
- thermocouple measurement and calibration
- properties of thermocouples and systematic errors
- infrared and general radiation thermometry and their application
- errors and calibration in radiation thermometry
- calibration baths and furnaces
- digital thermometers
- resistance thermometry: associated errors and calibration
- liquid-in-glass thermometry
- estimating measurement uncertainty¹
- extensive hands-on exercises in measurement



¹Participants with limited experience in estimating measurement uncertainty would benefit from first attending the one-day *Introduction to Estimating Measurement Uncertainty* course.

Past attendees have said...

"I have gained a better understanding of calibration and temperature measurement techniques"

"We have a better understanding of thermocouple theory and will help us to achieve better measurements"

Course details

Dates / Venue

Available dates are on our [website](#) and the venue is either NMI Lindfield (Sydney), 36 Bradfield Rd, or NMI Port Melbourne, Unit 1/153 Bertie Street.

Fee / Inclusions

Check the NMI [website](#) for the current price which includes lunch, refreshments and copies of:

- Monograph 5 Thermocouples in Temperature Measurement
- Monograph 9 Liquid-in-Glass Thermometry
- Monograph 11 Platinum Resistance Thermometry
- Monograph 12 Radiation Thermometry

Time

The course will start at 9 am and end by 5 pm.

Related courses

Course name	Duration	Dates
Introduction to Estimating Measurement Uncertainty	1-day	See NMI website
Testing Temperature-Controlled Enclosures	1-day	See NMI website
Humidity Measurement	1-day	See NMI website

In-house Options

Training may be carried out at your premises for groups of 6+ on a fee for service basis. Consultancies provide advice regarding specific measurement issues or training in advanced measurement techniques. More information is found on our [website](#).

Contact us

Phone (02) 8467 3796, or send an email to training@measurement.gov.au. For more information about NMI and our services, visit our website at www.measurement.gov.au/Services/Training/