

Temperature Measurement and Calibration

2 days

10 - 11 June 2024

£1298+ VAT

3 days

with 'Hands On' practical day
(optional) 10 - 12 June 2024

£1718+ VAT

Please complete the online registration form at
<https://training.npl.co.uk/temp-course>

Location

The course will be held at the National Physical Laboratory (NPL), Teddington, which is about 15 miles south-west of London. It is easily reached by road, rail (from London Waterloo) and air (Heathrow Airport). *National Physical Laboratory, Hampton Road, Teddington, Middlesex, TW11 0LW*

How to get to NPL

www.npl.co.uk/find-us

Further information

For further technical information please contact:

Karen Alston

Tel: **020 8943 6185**

Email: karen.alston@npl.co.uk

For other information please contact:

Email: training@npl.co.uk

Course additional options

Duration	Course Options	Dates	Price
2 days	Humidity Measurement and Calibration course	13 - 14 June 2024	£1298 +VAT
5 days	Temperature and Humidity combined courses	10 - 14 June 2024	£2737+VAT

You can register for combined courses at the same time. **Please complete the online registration form.**

Website:

<https://training.npl.co.uk/temp-course>

<https://training.npl.co.uk/hum-course>



Temperature Measurement and Calibration

A TWO/THREE DAY COURSE
(Day 3 optional)

10 - 12 June 2024

Temperature

Temperature is one of the most important of all physical quantities in industry. Its measurement plays a key part in quality and process control, in the efficient use of energy and other resources, in condition monitoring and in health and safety. There are few material properties of technological or engineering importance that do not depend on temperature to a greater or lesser extent.



The Course

The course will be suitable for technicians and technical managers closely concerned with temperature measurement and calibration, and will broadly follow the pattern established in previous courses. Covering the range $-200\text{ }^{\circ}\text{C}$ to $3000\text{ }^{\circ}\text{C}$, it will concentrate on those methods of measurement which are of greatest technological and industrial importance.

The lectures will cover the necessary background to the subject and full course notes will be provided. However, the emphasis will be on practical aspects of temperature measurement, calibration and traceability, with a lot of time being spent in laboratories.

The course will open with an introductory session on temperature scales and standards, including a résumé of the International Temperature Scale of 1990, ITS-90, and the three most important measurement techniques.

The laboratory sessions will be concerned with fixed points, resistance thermometers, thermocouples, radiation thermometers and thermal imaging. These will be supplemented by lectures in calibration techniques, uncertainties, traceability and accreditation.

The optional third day will provide opportunities for more in-depth training and 'hands-on' experience of some of the calibration techniques used in the laboratory.

The course will be given by members of the NPL temperature measurement team.

All participants will receive a certificate of attendance.

Some comments from previous courses

“The staff were very knowledgeable and good at what they do”

“Thanks, very well delivered”

“It was most helpful having experts around to help and answer questions, great course, thank you”

Provisional Programme

DAY 1 – Monday 10 June

- 09:30** Welcome and introduction
- 09:40** Temperature scales and the International Temperature Scale, ITS-90 - Graham Machin
- 10:20** Resistance thermometry - Radka Veltcheva
- 11:00** Tea / Coffee
- 11:20** Radiation thermometry - Helen McEvoy
- 12:10** Thermocouples - Jonathan Pearce
- 13:00** Lunch
- 13:45** Laboratory sessions I and II
- 16:15** Tea / Coffee
- 16:30** Innovative temperature measurement approaches - Graham Machin
- 16:50** Q and A session - Graham Machin
- 17:00** Close

DAY 2 – Tuesday 11 June

- 09:30** Calibration techniques - Jonathan Pearce and Karen Alston
- 10:15** Uncertainties - Richard Rusby
- 10:45** Tea / Coffee
- 11:00** Uncertainties part II - Richard Rusby
- 11:45** Equipment manufacturers' exhibition
- 12:00** Buffet lunch and exhibition
- 13:00** Laboratory sessions III and IV
- 15:30** Tea / Coffee
- 16:00** Lab tours
Concluding discussion
- 17:00** Close

DAY 3 – Wednesday 12 June

- 09:30** Practical training in the calibration of resistance thermometers, radiation thermometers, thermocouples and dry block calibrators
- 16:00** Close