

2010 Measurement Training Workshops Registration Form

Name:

Organisation:

Postal Address:

Physical Address:

Tel:

Fax:

Email:

Please tick which workshop(s) you wish to attend and in which city

	LOWER HUTT	AUCKLAND
Pressure	<input type="checkbox"/> 11 August	
Density	<input type="checkbox"/> 12 August	
Infrared Radiation Thermometry	<input type="checkbox"/> 13 August	
Balances and Weighing	<input type="checkbox"/> 17 August	<input type="checkbox"/> 24 August
Measurement, Uncertainty and Calibration	<input type="checkbox"/> 18 August	<input type="checkbox"/> 25 August
Temperature Measurement	<input type="checkbox"/> 19 August	<input type="checkbox"/> 26 August
Humidity	<input type="checkbox"/> 20 August	
Traceable Electrical Energy Metering	<input type="checkbox"/> 24 August	<input type="checkbox"/> 25 August

Payment Details:

Cheque enclosed:

(please make payable to Industrial Research Ltd)

or purchase order number:

For further information please contact:

Emily Sullivan (04) 931 3333 email e.sullivan@irl.cri.nz

or visit our website at <http://msl.irl.cri.nz>

Course Fees

Temperature Measurement \$700 + GST (\$787.50)
Traceable Electrical Energy Metering \$650 + GST (\$731.25) – Day 1 only
\$1000 + GST (\$1125.00) – Day 1 and 2

All other workshops \$650 + GST (\$731.25)

Fee includes all instruction materials and texts, lunch and morning and afternoon teas.

Times

8.30am registration with the workshops beginning at 9.00am and finishing between 4.30pm and 5.00pm.

Venues

Lower Hutt: Industrial Research Ltd
Gracefield Road, Lower Hutt

Auckland: Jet Inn Hotel, 63 Westney Road
Mangere, Auckland

Cancellation

We reserve the right to cancel any of the above workshops if we do not receive a sufficient number of registrations. Please do not make any confirmed travel bookings until the course has been confirmed.

For further information contact

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Website: <http://msl.irl.cri.nz>



Measurement Training Workshops

Balances and Weighing

This practical workshop has time and balances available for hands-on experience, problem solving and discussion. It is relevant to those who use, check or calibrate laboratory or industrial balances and scales and to those involved in laboratory accreditation and QA programmes.

Each workshop will be restricted to about 10 people.

Participants will learn how to:

- Define what a balance measures
- Select the correct balance for the task
- Use a balance effectively
- Calibrate a balance and calculate the uncertainty of the calibration
- Apply traceability and quality standards
- Use check weights

Humidity

Covers all aspects of humidity measurement especially relative humidity and dewpoint. This workshop provides an overview of physical principles, sources of error, treatment of uncertainties, surveying of environmental chambers and issues concerning calibration and the transfer of traceability.

Topics include:

- Humidity concepts, terms and definitions
- Methods for humidity measurement
- Selection, use and misuse of hygrometers
- Humidity generation and standards
- Calibration and traceability
- Recommended practices

Measurement, Uncertainty and Calibration

Gives a broad overview of measurement and calibration principles. Designed primarily for technical staff involved in making, reporting and design of measurements, and for those auditing or establishing measurement traceability under an ISO quality system.

Topics include:

- Basic measurement concepts
- Why measurements sometimes don't work
- Measurement design
- Making measurements traceable
- Principles of calibration
- Assessing the uncertainty in measurements

Pressure Calibration

Demonstrates the practical aspects of pressure gauge calibration including equipment selection, calibration methods and the use of deadweight testers. It includes hands-on calibration sessions using deadweight testers and gauges, and is relevant to people involved in checking and calibrating pressure gauges and to those involved in meeting the requirements of laboratory accreditation and QA programmes.

Participants will learn how to:

- Select pressure measuring equipment
- Use and maintain a deadweight tester/reference gauge
- Understand a deadweight tester calibration report
- Calibrate a pressure gauge and calculate the measurement uncertainty
- Meet the requirements of traceability and quality standards

Infrared Radiation Thermometry

Covers practical problems associated with the use of infrared radiation thermometers and engenders confidence in your measurements. The course is appropriate for those working between -50°C to 2000°C .

Topics include:

- Emissivity
- Reflection errors
- Radiation thermometers
- Errors and uncertainties
- Low and high temperature applications
- Blackbodies
- Thermal imaging
- Calibration

Temperature Measurement

Covers the use, care and calibration of thermometers. It is relevant to personnel who use or check thermometers as a part of laboratory testing, plant installation, or monitoring and maintenance tasks. Staff involved in laboratory accreditation and QA programmes will find it especially useful.

Topics include:

- Temperature, definitions, the ITS-90 temperature scale
- Traceable standards, calibration, certificates, uncertainties
- Liquid-in-glass thermometers, ice point checks
- Resistance thermometers, instrumentation
- Demonstration of calibrations and use of thermometers
- Thermocouples, temperature control, furnace and oven surveys
- Radiation thermometers and surface temperature measurements

Density Measurement

The course covers the practical aspects of ensuring traceability in measurements of density, with emphasis on methods for use and calibration of hydrometers. It will provide you with a set of skills and tools that you can immediately use in your workplace.

Participants will learn how to:

- Use and maintain hydrometers
- Calibrate a hydrometer and calculate the measurement uncertainty
- Understand and apply information from specifications and calibration certificates
- Select suitable instruments for their density measurements
- Meet the requirements of traceability and quality standards

Traceable Electrical Energy Metering

Day one of this two-day practical course is designed to give all staff in the Approved Test Houses an understanding of the technical side of their laboratory's operation. Day two goes into more depth and is particularly relevant for staff who need to understand their laboratory's measurement uncertainties in detail.

At the end of day two, participants can expect to be able to carry out the Best Measurement Capability (BMC) calculations required for the Class A Test Houses and also to calculate the uncertainty of energy metering measurements both in the laboratory and in the field.