Australian Government
Department of Industry, Innovation and Science

National Measurement Institute

# PHOTOMETRY AND RADIOMETRY

This two-day course covers the broad range of equipment and techniques used to measure colour and light output, the basic operating principles involved in radiometry, working techniques, potential problems and their solutions.

## Course Objectives

The course provides participants with knowledge and skills to:

- understand the fundamentals of radiometry and photometry
- understand the principles of operation of a range of electrical, optical and mechanical equipment
- identify various sources of error that affect radiometric measurements

## Course Outline

The topics covered include:

- terminology and basic concepts
- traceability and international standards
- spectoradiometry
- sources
- colorimetry
- detectors and optical equipment
- primary standards
- electrical equipment
- photometry
- UV radiometry
- laser radiometry
- laboratory demonstrations
- sources of error and calculating measurement uncertainty[1]

[1]Participants 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…**

*"Through this course we have gained a greater understanding of radiometry and photometry so we can make more accurate measurement decisions in our lab"*

*"I am now able to utilize equipment that is not being used to its full potential, which to reduce uncertainty."*

## Course Details

### Dates / Venue

Available dates are on our website and the venue is NMI Lindfield (Sydney), 36 Bradfield Rd

### Fee / Inclusions

Check the NMI website for the current price which includes lunch, refreshments and Monograph 10: Introduction to Radiometry

### Time

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

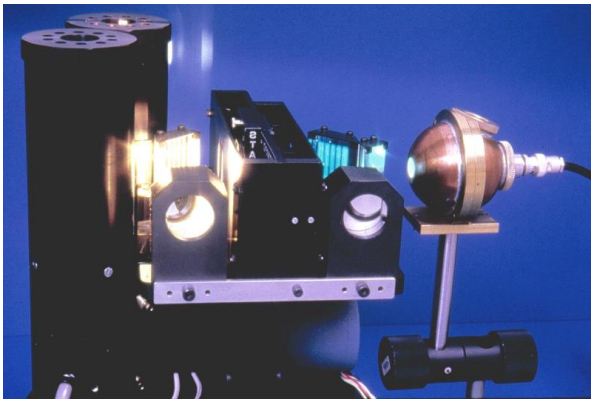
## Related Courses

| Course name | Duration | Dates |
|---|---|---|
| Introduction to Estimating Measurement Uncertainty | 1-day | See NMI website |

## Photometry and Radiometry standards

A range of applications requires accurate calibration and the support of specialised expertise in radiometric and photometric measurement:

- industry needs to know the efficiency and colour of lighting systems
- total radiant flux must be known for fire safety measurements
- ultraviolet sources are used for the medical treatment of elevated bilirubin levels in babies, and for curing paint and sterilising water
- lasers may be used for eye surgery or cutting metal
- colour matching for computer graphics displays and TV cameras is vital in the photographic industry



NMI staff have high-level scientific expertise in photometry and radiometry. Recently, they developed a new primary radiation standard with significantly improved accuracy, benefiting clients of NMI's calibration services in optical power, radiant intensity, colour, irradiance luminous flux and several other areas.

## 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.industry.gov.au/client-services/training-and-assessment.