



Measurement Uncertainty

Gain the skills and knowledge to take into account uncertainty when carrying out measurement activities by attending our Management Uncertainty training course.

This 1-day practical course provides examples of typical uncertainty budgets, across different fields of measurement. The interactive workshops cover topics such as 'reporting of uncertainties', 'traceability, accuracy, linearity, stability and uncertainty' and 'quantifying uncertainty components'.

By the end of the course delegates will have the knowledge to develop uncertainty budgets to meet the requirements of ISO/IEC 17025 and laboratory accreditation bodies.

COURSE DURATION

1 day

CPD

Equivalent to 7 hours

COURSE PRICE

From £675 + VAT

DATES & VENUES

[View dates & venues](#)

CERTIFICATES

All delegates will receive a certificate on completion.

Who should attend?

This course is suitable for anyone working in the field of measurement and performing measurement activities, including:

- quality and design engineers
- laboratory and technical personnel
- assessors of laboratory/quality management systems
- assessors of calibration and testing laboratories
- quality and technical managers

Students attending this course will benefit more if they have a basic knowledge of maths and statistical techniques, although this is not essential. Participants should bring a laptop computer or calculator which has basic statistical functions.

Key topics

Topics covered on the course include:

- the importance of uncertainty of measurement
- basic concepts: traceability, uncertainty and terminology
- impact of uncertainty on results and compliance with specifications
- errors, effects and corrections
- Type A uncertainties and selection of statistical tools
- Type B uncertainties, identification and use
- combined uncertainties
- expanded uncertainties and confidence intervals
- reporting of uncertainties
- sources of uncertainty in different calibration fields
- worked examples
- attribute studies
- sources of further information

Skills gained

By the end of this course, delegates will be able to:

- apply the methodologies for calculating uncertainty budgets using practical examples
- develop a structured uncertainty budget, with an awareness of the uncertainty contributions associated with a measurement system and how to evaluate the magnitude of these errors
- utilise the results of uncertainty budgets to determine cost and efficiency improvements in measurement systems.



A Measurement Uncertainty Training Course certificate will be awarded to delegates who complete all elements of the course.

Course agenda

Our training courses are designed to optimise the learning experience for delegates both in face-to-face settings and in our Virtual Classroom.

Under the guidance of our expert tutors, attendees will follow an agenda which is briefly outlined below:

- Welcome and Introduction
- What is Uncertainty? Why Measure it?
- Terminology in Measurement
- Basic Concepts: Traceability, Accuracy, Linearity, Stability and Uncertainty
- Steps in Calculating Uncertainties
- Quantifying Uncertainty Components Type A
- Workshop: Type A Study
- Type B Uncertainties
- Workshop: Calculating Type B Uncertainty Contribution
- Combining Uncertainties
- Workshop: Use of Previous Study Data
- Analysis of Previous Study Data
- Workshop: Determination of Modified Coverage Factors
- Reporting of Uncertainties
- Attribute Studies
- Summary & Course Evaluation

In-company training

Ideal for groups, you can receive this course exclusively for your organisation at your premises or online in our user-friendly Virtual Classroom.

Enjoy cost-effective flexibility and personalised learning with tailored messaging designed to address your unique business challenges.

[Contact us for a quote.](#)

Tutor gave a grounded view of measurement uncertainty principles that we can now start implementing.

Merseyside Police

Fantastically presented, making it clear and understandable. The tutor had a great pace and held my attention for the full span of the course.

Numatic International Limited

The tutor explained the content of the course in a clear and easily understandable manner. I was impressed at how interactive the course was with plenty of opportunity to ask questions.

Yorkshire Precision Gauges Ltd

We all found the tutor to be an engaging and very knowledgeable specialist, he made what could have been quite dry subjects interesting, and relevant to what we needed to learn.

British Airways

[Read our ISO 17025 course reviews](#)

Why train with Bywater?

Bywater is the leading independent provider of professional management systems training in the UK.

Our expert training offers practical understanding of how to realise the benefits and assess the success of implementing and operating successful management systems.

Bywater delegates know they can rely on proven training delivered by experts at times and locations to suit their needs.

40 years established

100+ course titles

15 UK locations

1000+ courses annually

 Global Virtual Classroom

CQI & IRCA, ISEP, RSS and IOSH approved training provider.



[VIEW DATES & VENUES](#)

Booking is easy

Simply select a course date and venue and fill in the online form. View our full range of courses at www.bywater.co.uk

If you have any questions please call us on 0333 123 9001, use our online chat or email contact@bywater.co.uk

Bywater