



NEL

Choose certainty.  
Add value.

## Practical Applications of Measurement Uncertainty Training Course



### About the Course

Measurement is fundamental to the control of quality, efficiency and safety. This one day course will enable delegates to apply the techniques developed in NEL's Introduction to Measurement Uncertainty Training Course to examples tailored to the Oil and Gas sector. This will give delegates confidence in the development and use of uncertainty budgets for complete measurement systems. Case studies are used to illustrate the application of such calculations in minimising the impact of measurement uncertainty.

National  
Measurement  
System



## Introduction & Objectives

Measurement is fundamental to the control of quality, efficiency and safety. It is vital that all those using industrial measurement recognise that measurement is not an exact science. Understanding the magnitude of the uncertainty associated with any measurement is the first step to improving accuracy. An ability to identify the key issues affecting accuracy is the crucial step in ensuring that limited resources are correctly targeted in any drive to improve accuracy.

This course will enable delegates to apply the techniques developed in NEL's Introduction to Measurement Uncertainty course to examples tailored to the oil and gas sector, to give them competence in the development and use of uncertainty budgets for complete measurement systems.

Through a series of hands-on case studies, delegates will gain confidence in building and using spreadsheet-based uncertainty budgets. The case studies will require delegates to review input uncertainty sources and values, assess assumptions and confirm basic calculation methods. Each case study will focus on a different measurement system and provide delegates with opportunities to use the budgets to explore potential modifications, for example, to reduce financial exposure or meet regulatory limits.

## Who Should Attend

- Research and Development Engineers
- Instrumentation Engineers
- Quality Managers
- Technical Managers

A prerequisite for attendance at this course is having attended NEL's Introduction to Measurement Uncertainty course or provision of evidence that the delegate is familiar with the basic principles introduced in that course.

## Enquiries

The course is delivered regularly at various international locations, but is also available as an in-company (private) course. It includes comprehensive course notes which will form useful reference material in the future. Enquiries about course dates and delegate fees can be made by emailing [events@tuvnel.com](mailto:events@tuvnel.com) or by telephoning the Events Team on **+44 (0) 1355 593704**.

## About NEL

NEL is a leading provider of measurement services to the world's Oil and Gas Industry, and is the custodian of the UK's National Standard for Flow Measurement. We provide services in;

- Measurement consultancy
- Meter development and calibration
- Flow metrology research and development
- Multiphase and wet gas testing
- Erosion
- Environmental
- CFD modelling
- Training and knowledge transfer



## Practical Applications of Measurement Uncertainty Training Course

### Course Programme (Illustrative)

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0830 – 0845      **REGISTRATION AND COFFEE**

**Module 1: Overview of Uncertainty Concepts**

- An introduction to the basic terminology and concepts of uncertainty

**Module 2: Table-Based Uncertainty Budgets**

- Building and using a spreadsheet-based uncertainty budget

1005 – 1025      **COFFEE**

**Module 3: Case Study 1**

- Building and using the budget for case study 1

**Module 4: Case Study 1**

- Group discussions and lessons learned from case study 1

**Module 5: Case Study 2**

- Building and using the budget for case study 2

1225 – 1310      **LUNCH**

**Module 6: Case Study 2**

- Group discussions and lessons learned from case study 2

**Module 7: Case Study 3**

- Building and using the budget for case study 3

1430 – 1450      **COFFEE**

**Module 8: Case Study 3**

- Group discussions and lessons learned from case study 3

**Final Group Discussion and Questions**

1630              **SUMMARY AND CLOSE**



To enquire about this Course  
please contact:

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