
Introduction

The Measurement of Uncertainty in the microbiological laboratory is increasingly a requirement of industry accreditations internationally, in particular for laboratories accredited to the ISO/IEC 17025 standard (or equivalents like ISO/IEC16159).

The estimation of uncertainty of measurement provides a quantitative estimate of the quality of a measurement value, and is thus an essential component of a quality management system for laboratories.

This course is designed to help laboratories engaged in routine microbiological analysis to calculate uncertainties of their test or measurement results. The workshops take participants through the process of evaluating uncertainty in microbiology with hands-on formulae (APLAC method) being provided as well as an appreciation of a European method which follows closely the generic GUM.

Objectives

1. Understand the factors contributing to the overall uncertainties
2. Identify the accreditation body requirements for determining expanded uncertainty of measurements
3. Enable analysts/microbiologist to carry out an uncertainty evaluation for their own laboratory methods

Who Should Attend

Practitioners in chemical and microbiological laboratories, microbiologists, food technologists, and others involve in the food and microbiological testing.
(Participants preferably should have some knowledge of or attended the uncertainty of measurement course on metrology or chemical testing before)

Course Contents

Day 1

- Introduction & Definitions
- Interpretation & Guidance
- Principles of estimating the uncertainties
 - Standard uncertainty
 - Calculating the combined uncertainty
 - Expanded uncertainty
- Experimental Protocol
- Interpretation for microbiological testing
- Poisson/Bias
- Uncertainty arise from sampling

Day 2

- Estimation uncertainty step-by-step
 - Simplest approach
 - Alternative data
- Fish Bone Diagram
- Estimation of the components of uncertainty
- Mathematical models of microbiological test results and uncertainties
- Cochran's test
- Reporting measurement uncertainty
- Measurement uncertainty for low count

Workshops on Examples using various methods including method recommended for APLAC countries. Some hands-on formulae would also be provided.

Methodology

Remote learning – virtual classroom

Pre-requisite

1. Good internet connectivity
2. Laptop / Handphone with camera
3. Headset with mic

Course Presenter

DR. STEPHEN WONG KAM SUN – is a Certified Trainer by the HRDCorp. He is an excellent Quality Consultant, trainer and qualified Lead Assessor for both ISO 9000 and ISO/IEC 17025. He is also an effective management trainer. He holds a PhD (Sunway University), MBA degree (University of Wales, UK), Chemistry degree (University Malaya), Diploma in Marketing (CIM, UK) and Certified Diploma in Accounting & Finance (ACCA, UK). He has 35 years of management & training experience, including 25 years in quality training and consultancy.

He was the Hon. Secretary (16 years) for the Institute of Quality Malaysia, an approved Quality Trainer for SIRIM since 1989 and a Quality and Management Consultant to some companies in Malaysia. He is a Council Member (since 1989) of the Malaysian Institute of Management and is also a well recognized trainer for MIM. He is also the Gen. Secretary of Malaysia Register of Certificated Auditors (MRCA) since its inception in 1998.

He was a member (1991-2002) of the Malaysian National Accreditation Council of the Department of Standards Malaysia and still sits on three other national committees on Quality and Environmental in relation to ISO. Mr. Stephen Wong has been a key member of the TC 176 and TC 207 national committees responsible to CASCO for the development of the ISO 9001, ISO/IEC 17025 and ISO 14001 standards and other conformity assessment standards. He is also a member of the IATCA (now IPC) representing MRCA in the development of the ISO 19011 Auditing Standard for the ISO 9000 and the ISO 14000.

Registration Form

Please register the following for the course on
"Uncertainty of Measurement in Microbiology"

Name: _____
Designation: _____

Name: _____
Designation: _____

(please attached extra list if more than two participants)

Reminder: Participants need to bring a laptop and scientific calculator for this course.

Name & Address of Company:

Contact Person: _____
Designation: _____
Tel: No: _____ Fax: _____
E-mail: _____

Signature: _____
Date: _____

Method of Payment:

Please made cheque payable to **WKS HOLDINGS SDN BHD** or transfer the payment to our **Public Bank account no: 3078894831** and send us a copy of the transfer slip.

WKS reserves the right to cancel or postpone the course in the event of unforeseen circumstances.

Registration Guidelines & Procedures

1. Early registration is encouraged. Participants shall be registered on a first-come-first-served basis.
2. Register by completing attached form and return by e-mail to admin@wks-h.com
3. Payment of fee should be made 4 days before course commence.
4. Please made cheque payable to WKS HOLDINGS SDN BHD or transfer the payment to our Public Bank account no: 3078894831 and send us a copy of the transfer slip.
5. Notification of cancellation must be in writing received 4 working days prior to commencement of course (20% of course fee will be retained). Otherwise, full fee will still be charged.
6. WKS reserves the right to cancel or postpone the course in the event of unforeseen circumstances. However, in such an event, participants would be informed as early as it could possibly permit.

WKS HOLDINGS SDN BHD
(98401017072)
1A-3A, Plaza Mayang, Jalan SS 26/9
47301 Petaling Jaya, Selangor DE
Tel : 03-78038188 Fax : 03-78039188
E-mail : admin@wks-h.com
[Http://www.wks-h.com](http://www.wks-h.com)

An interactive
virtual/online training

Uncertainty of Measurement in Microbiology



Administrative Details

Date: 20 – 21 July 2022
Time: 0900 – 1700
Venue: Virtual/On-line
Join from your home/
office by Virtual
Classroom Training
Fees: RM 1,050 per participant
HRD Corp Claimable Course

Organized & Management by
WKS HOLDINGS SDN BHD



Reg. No. : Q109988-1