Food safety

Metrology in the Food Industry

One day to make reliable the measurements your decisions rest on: cooking and storage temperatures, weighing, pH, pressure. Participants learn to list instruments, to tell calibration from verification, to read a calibration certificate, to set a tolerance and a frequency, and to react when an instrument is found out of tolerance. The exercises use your own instrument fleet.

Duration : 1 day

Objectives

1. List measuring instruments and classify those that monitor a CCP, an OPRP or a legal requirement
2. Distinguish calibration, verification and adjustment, and choose the right operation for each instrument
3. Read a calibration certificate: results, uncertainty, traceability, compliance with a tolerance
4. Set tolerances and frequencies and justify them
5. Handle an instrument found out of tolerance, including assessing the products made since the last check

Programme

Day 1 — morning

• Why metrology matters for food safety: HACCP, ISO 22000:2018 and GFSI requirements

• Vocabulary: error, uncertainty, calibration, verification, adjustment, metrological traceability

• Inventory and classification of critical instruments: thermometers, probes, scales, pH meters, pressure gauges

• Calibration providers, accreditation under ISO/IEC 17025:2017 and reading a certificate

Day 1 — afternoon (workshop)

• Tolerances, maximum permissible errors and frequencies: how to set and adjust them

• Internal verifications: ice point, reference thermometer, check weights

• Instrument out of tolerance: hold, assessment of impact on products, actions

• Weighing of prepackaged products and control of net quantity

• Workshop: metrological monitoring plan for your critical instruments

Teaching methods

• Work on your instrument inventory and your calibration certificates

• Demonstration of verifying a thermometer and a scale

• Decision exercise on an instrument found out of tolerance

• Final test on reading a calibration certificate

Assessment and documents

Knowledge test and a practical verification exercise, reaction survey at D+1. Numbered certificate verifiable online for each participant; training report and the metrological monitoring plan drafted in the workshop handed to the company.

Bilingual materials for every participant; each classroom course comes with its digital twin on OmniLearn.

Good to know

For CCP monitoring by operators, see the half day “CCP Monitoring and Records (Operators)”. Laboratories aiming for accreditation will find the full standard in the course “ISO/IEC 17025:2017 — Laboratories”.

Practical information

Duration	1 day
Audience	Quality, maintenance, laboratory, production
Prerequisites	No prerequisites
Group size	Groups of 6 to 12 participants, in-company
Format	In-company, face to face on your site
Language	French, Darija or English; bilingual materials
Funding	OFPPT special training contracts (TFP), GIAC, Maroc PME: we prepare the applications with you, at no extra cost.
Programme customisation	Programme adapted to your procedures, your equipment and your audience

Frequently asked questions

Must all our instruments be calibrated by an accredited laboratory?
No. Instruments that monitor a CCP or a legal requirement need demonstrated traceability; others can be verified in-house against a reference. The day helps you classify your fleet and justify your choices.

What is the difference between calibration and verification?
Calibration establishes the difference between the instrument and a reference, with its uncertainty. Verification compares that difference with a set tolerance and concludes whether it complies or not. The course shows when to use each.

Does the course cover legal metrology?
It presents the principles for weighing instruments and the net quantity of prepackaged products. Precise obligations depend on your instruments and markets; they are examined with you during the workshop.