

Intro to Unit 4 Laboratory Equipment – Metrology (NI candidates only)

UNIT DESCRIPTION

This unit is designed to provide the candidate with the knowledge associated with a calibration laboratory technician. You will learn about laboratory equipment and processes and any associated guidance/specification requirements.

WHAT TO EXPECT

Courses are offered each year for this and all Units. You will be taught in line with the unit learning outcomes. It is also expected that you will undertake your own learning, by ensuring you are familiar with all areas shown in the unit syllabi (found on pages 3-5).

CPCF courses will use different learning delivery methods. You will have two classroom-based days with the trainer. Access to an on-line portal that provides you with on-going detailed course notes, inter block assessments plus remote sessions, with the trainer and other trainees.

In addition to this, the trainer may choose to provide, via the on-line portal, videos or other learning materials, as they deem necessary; these additional learning materials will be provided throughout the duration of the course.

You are expected to complete all assessments/assignments, as notified to you, by your trainer. You will upload them for marking, by the designated deadline.

Written exam: You will register for the Laboratory Equipment – Metrology Unit and complete the associated 1.5 written exam and demonstrate the knowledge requirements for this subject.

Portfolio: You will complete the associated portfolio and demonstrate the skills requirement for this subject. This will be submitted to the Verifier by **1 October**.

NOTE: You may not take the written examination if the portfolio is not submitted.

UNIT INFO

Assessment types:

Written exam (1.5)
Portfolio

Resources information:

Portfolio requirement is found on our website:

<https://www.tradingstandards.uk/practitioners/training-development/qualifications-resources#stage2>

Examples of written exam question types, are found here:
<https://www.tradingstandards.uk/practitioners/training-development/qualifications-resources#pastpapersreports>

Guidance information on assessment types are found here:
<https://www.tradingstandards.uk/practitioners/training-development/qualifications-resources#cpcftrainingexams>

Unit designated learning hours:

200 hours (delivered by both training and self-learning hours)

Qualifications Team info:

Available Mondays to Fridays.
9am to 4pm

Telephone: 01268 582242
Email: qualifications@tsi.org.uk

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CLASSIFICATION OF MARKS

All examinations are marked out of 100% and with a pass mark of 40%.

On passing an examination/coursework you will be graded with the following classifications: Distinction, Merit and Pass.

All effort should be made to gain the highest mark possible throughout the examining process.

Classification	Marks
Distinction	70-100%
Merit	60-69%
Pass	40-59%
Fails	0-39%

CPCF REGULATIONS AND POLICIES

All forms of assessment fall within strict regulations and you must ensure you understand and adhere to all regulation requirements.

The regulations that cover all aspects of the CPCF qualifications can be found on our website:

<https://www.tradingstandards.uk/media/documents/practitioners/cpcf/apel--regulations/cpcf-regulations-final-updated-april-2020.pdf>

Please ensure you are familiar with all aspects within the regulations, taking particular notice of any area relating to examinations, coursework and deadlines.

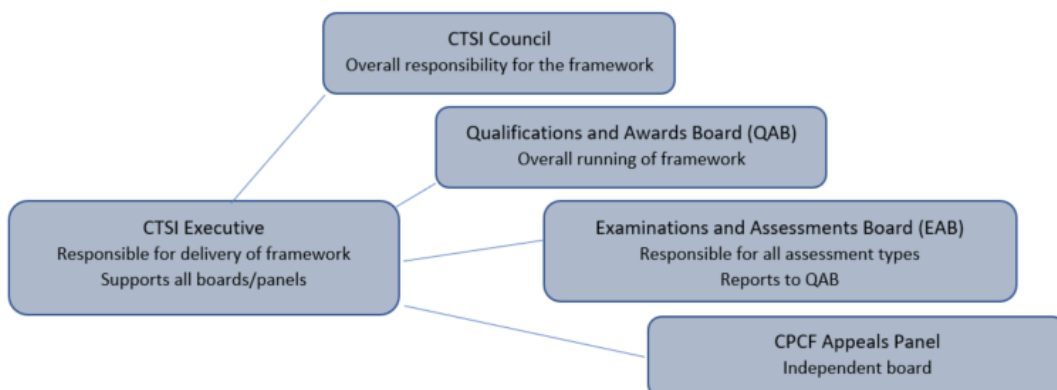
CTSI will publish policies surrounding the CPCF qualification from time to time. These are found here:

<https://www.tradingstandards.uk/practitioners/training-development/qualifications-resources>

It is important that you are aware of any notifications provided by CTSI throughout the year to ensure you are meeting any/all requirements that the Executive or the Qualifications and Awards Board have put out.

GOVERNANCE

For more detailed information on the governance of the CPCF, you will find this within the regulations. Below outlines the governance structure approved by CTSI Council.



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UNIT SYLLABI

NOTE: The examiners may expect candidates to show knowledge of legislation which is in existence but not in force, (i.e. Acts which have not finally been enacted, or Regulations which have not reached their commencement date) if it is directly and significantly relevant to the subject-matter of the examination.

Learning Outcomes:

At the end of this module, the student will be able to demonstrate knowledge of:

1. The quality assurance in metrology laboratories including national, EU and International frameworks for its provision (including appropriate legislation where applicable).
2. Uncertainty of measurement principles relating to mass, length, volume, flow and density
3. Care, maintenance, calibration and history of calibration equipment
4. Principles of quality assurance
5. Following and applying good laboratory practice
6. Maintaining a safe working environment
7. Avoiding contamination or cross contamination of equipment or artefacts

Indicative areas of study

The following terms have been used to indicate the level of knowledge required in each element;

Detailed: To an in-depth level, and with a fine degree of distinction between concepts;

Working: With the ability to apply the learning to situations to resolve problems;

Basic: Having an awareness of the organisations and concepts.

Assessments will reflect the requisite level of knowledge in each given area of the syllabus.

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Syllabus

Detailed knowledge of:

Quality Assurance element

UKAS requirements for calibration laboratories Various UKAS Publications

ISO/IEC 17020 Requirements for the operation of various types of bodies performing inspection

BS EN ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories

ISO 19011 Guidelines for auditing management systems

Environmental element

OIML G13 Planning of metrology and testing laboratories

Technical element

OIML G7 Guide to calibration

OIML G1 Evaluation of measurement data – Guide to the expression of uncertainty in measurement

OIML R111 Weights of classes E1, E2, F1, F2, M1, M1-2, M2, M2-3 and M3

UKAS M3003 The Expression of Uncertainty and Confidence in Measurement

Working knowledge of:

- Establishing a laboratory environment
- Laboratory environment and monitoring
- Care and maintenance, building a history and error checking routines for standards including unbroken measurement chains
- Instrument performance, evaluation and monitoring regimes
- Performing uncertainty budgets
- Determination of air buoyancy
- Intra-laboratory evaluations
- Interlaboratory evaluations
- Validation of calibration methods
- Calibration performance
- Check on precision of instruments
- Use of check standards
- Reporting of results
- Shared Risk
- Preparation of certificates and reports
- Audit schedules
- Internal audits
- Preventative actions
- Corrective actions
- Management of UKAS laboratories
- Calibration intervals
- Management Review

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Food Hygiene element

- HACCP
- Contamination, cross contamination
- Causative organisms
- Food poisoning
- Good hygienic practices
- Food Contamination
- Personal hygiene
- Food Hygiene Management systems
- Risk Assessment protocol
- Local Authority health & safety procedures

Health and Safety element

- Management of Health and Safety
- Risk assessment
- Laboratory risks and control measures