

Specification of Competency Standards
for the Testing, Inspection and Certification Industry
Unit of Competency

Functional Area - Testing Operations

Title	Develop equipment calibration methods
Code	105885L5
Range	This unit of competency (UoC) covers the abilities to develop equipment calibration methods for laboratory / on-site testing activities to meet the requirement of intended use of the calibrated equipment.
Level	5
Credit	4 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Possess knowledge of equipment calibration methods</p> <ul style="list-style-type: none"> • Comprehend the principles and importance of equipment calibration. • Describe the measurement traceability concept and essentials of the International System of Units (S.I.). • Comprehend the fundamentals and functions of reference standards and certified reference materials. • Identify major equipment that require calibration in the laboratory. • Specify the requirements of equipment calibration in relevant national and international standards, including but not limited to ISO, AS/NZS, OIML, ASTM, BS, EN and JIG. • Explain the operating principle of selected equipment which requires the calibration. • Employ the operating principle of equipment used for calibration. • Apply the principle and mathematical concepts for evaluation of uncertainty in the calibration. • Evaluate the factors and elements contributing the effect to the design of calibration methods. • Employ the metrology principle and statistical concepts for taking and evaluating measurement data. <p>2. Develop and document calibration methods for equipment</p> <ul style="list-style-type: none"> • Develop equipment calibration methods based on manufacturer's specifications and recommendations, international guidelines and procedures. • Determine the certified reference materials, reference standards, environmental conditions, techniques and equipment required to deliver the calibration work. • Determine the parameters that are critical to the equipment calibration. • Compile calibration methods and performance checks with details including step by step instructions to ensure that the operation can be properly performed on a routine basis. • Establish the interval between calibration and acceptance criteria of parameters taking into consideration of intended use, applicable range and specifications of test standards. • Critically monitor and evaluate the applicability of methods and the competence of assigned personnel in achieving the accuracy of the work. • Maintain documentation control and distribution of calibration methods/procedures. <p>3. Exhibit professionalism</p> <ul style="list-style-type: none"> • Ensure all developed methods comply with good laboratory practices and relevant categories of standards. • Ensure all developed methods can address the performance and traceability of equipment. • Ensure all developed methods are well documented with procedure details including calibration intervals and criteria.

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Assessment Criteria	The integrated outcome requirements of this UoC are the abilities to: <ul style="list-style-type: none">• develop and compile equipment calibration methods that are fit for the intended use and satisfy international guidelines and relevant accreditation criteria without compromising quality, accuracy and traceability,• establish the calibration interval and determine the relevant acceptance criteria of the equipment under calibration,• monitor and critically evaluate the applicability of calibration methods and skills of assigned personnel in performing the calibration work.
Remark	