



Australian Government

Department of Education, Employment and Workplace Relations

MEM15010B Perform laboratory procedures

Release: 1

MEM15010B Perform laboratory procedures

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers working under laboratory conditions, performing calibration of equipment and writing reports on the results.
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Application of the Unit

Application of the unit	This unit applies to the use of a range of sophisticated equipment that provides independent feedback on quality processes and procedures. Individuals are likely to be working autonomously and following scientific procedures under controlled conditions. All work would be carried out to predetermined standard operating procedures. This unit would be taken in conjunction with appropriate technical units. Band: B Unit Weight: 8
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Work under laboratory conditions	1.1. Independent tests are conducted under controlled conditions.
2. Perform calibration	2.1. Equipment is verified and calibrated to agreed quality standards. 2.2. Calibration status is safeguarded against unauthorised adjustment. 2.3. Accurate records are kept for reference purposes. 2.4. Test equipment is periodically recalled for adjustment, repair and re-calibration. 2.5. Documentary evidence is maintained, covering identification of equipment; frequency of re-calibration; calibration status and procedures for recall, handling and storage, adjustment, repair, calibration, installation and use. 2.6. Calibration to reference standards of known accuracy such as national or international standards is traced, or where these do not exist, is set to specifically developed criteria.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- obtaining, reading and interpreting relevant drawings, circuits, specifications, instructions and data in accordance with standard operating procedures
- planning and sequencing operations
- checking and clarifying task-related operations
- using calculations and numerical operations within the scope of this unit
- conducting independent tests under controlled conditions
- checking measuring equipment for correct calibration against the agreed quality standards
- safeguarding the calibration status of the equipment against unauthorised adjustment

REQUIRED SKILLS AND KNOWLEDGE

- completing and maintaining records of measuring equipment calibrated
- recalling test equipment for adjustment, repair and re-calibration
- using reference standards or specific criteria as the basis for calibration.
- documenting test results
- preparing reports on the tests carried out
- conducting inspections, tests and audits in accordance with standard
- using results of inspections, tests and audits to inform the design and service

Required knowledge

Look for evidence that confirms knowledge of:

- the tests to be undertaken
- the conditions under which the tests are to be undertaken
- the testing procedures to be followed
- the reasons for conducting tests under controlled conditions
- the need for tests to be conducted independently
- the quality standards against which the measuring equipment is to be calibrated
- the correct operation of the measuring equipment
- the specifications of the measuring equipment
- the tools and equipment required to check the calibration of the measuring equipment
- the procedures for checking the calibration of the measuring equipment
- any codes, standards, legislative or regulatory requirements applicable to the measuring equipment and/or calibration
- the procedures for preventing unauthorised adjustment of equipment
- the reasons for protecting equipment against unauthorised adjustment
- the records to be kept with respect to the calibration of measuring equipment
- the reasons for keeping accurate calibration records
- the procedures for recalling test equipment for adjustment, repair and re-calibration
- the frequency of test equipment recall
- the reasons test equipment may be recalled
- all relevant documentation relating to the calibration/re-calibration of test equipment
- the procedures for completing the relevant documentation
- sources of reference standards and procedures to be used in the absence of reference standards
- the reports to be prepared/provided with respect to the test equipment being tested
- the procedures for preparing/ providing reports on tests carried out on test equipment
- the auditing processes to be applied to testing procedures
- the use of information from the inspections, tests and audits conducted in the development of design and servicing of products/equipment

REQUIRED SKILLS AND KNOWLEDGE

- hazards and control measures associated with performing laboratory procedures, including housekeeping
- safe work practices and procedures

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to perform laboratory procedures.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate. This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with performing laboratory procedures or other units requiring the exercise of the skills and knowledge covered by this unit.
Method of assessment	Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
Guidance information for assessment	

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Tests	Tests will be conducted to a standard method and may be: • mechanical tests such as for hardness, tensile and impact • electrical tests such as for resistance, capacitance and inductance • semiconductor or other electronic tests
Calibration	Calibration refers to those calibrations which are conducted to a specified standard using equipment available in the workplace/laboratory. It may include the testing of known standard samples
Test equipment	May be mechanical, electrical or electronic or some combination
Documentary evidence	Documentary evidence of calibration will be sufficient to satisfy the needs the certifying body (e.g. NATA) or as otherwise specified in the calibration standard or in accordance with manufacturers' recommendation
Documented	Documentation of test/calibration results will conform to good laboratory practice and will allow for the verification of results and for a historical record of results such as might be required for verification of results, quality audits and legal inquiries.

Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Quality
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