Australian Government

Department of Education, Employment and Workplace Relations

MSL924002A Use laboratory application software

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the ability to use and apply computer application software in the laboratory, field and production plants for analysis and reporting.

Application of the Unit

Application of the unit	This unit of competency is applicable to technical officers and laboratory technicians in all industry sectors. It describes the application and use of software packages in the context of laboratory or field work. Typically this software would be for the storage, retrieval, analysis and display of information. There is no expectation that candidates would be able to customise the software to meet specific needs. Industry representatives have provided case studies to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting. These can be found at the end of this unit of competency under the section 'This competency in practice'.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Access application software	1.1. Identify software required for the task 1.2. Open software from a personal computer or network terminal
2. Use software for specified purposes	2.1. Input a range of scientific data into a computing system 2.2. Conduct searches for the retrieval of required data 2.3. Use application features for efficient computation 2.4. Construct data sets and databases for numerical and graphical analyses
3. Produce reports of retrieved data and/or processed data	3.1. Analyse data using features of the software package 3.2. Select options for constructing data reports 3.3. Print the results of data analyses using features of the software package 3.4. Integrate data from diverse application software units in a report 3.5. Report the outcomes and rationale for computerised database searches where appropriate 3.6. Reference computerised data sources according to the style requirements of the enterprise
4. Perform simple record housekeeping	4.1. Backup worked data according to enterprise standard procedures 4.2. Maintain archive data according to enterprise standard procedures 4.3. Maintain hard copy data according to standard enterprise operating procedures 4.4. Apply approved antivirus software and general standard quarantine procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

Required skills include:

- using software application features and instructions to input, save, analyse, sort, retrieve and display the records or data
- using software for the analysis, reporting and management of laboratory and field data and information
- using in-house software manuals to augment skills and solve operational problems
- selecting the most appropriate software package for the task
- backing up electronic storage
- using scanning software to protect in-house software and data

Required knowledge

Required knowledge includes:

- applications of the software package
- terminology associated with the software packages
- basic knowledge of the types of spreadsheet, database, data analysispackages that are available
- application ofspecific software package features torelevantlaboratory tasks
- relationship between the protocol for data input and file storage of the data
- general file and record maintenance
- relevant health, safety and environment requirements

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	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors should ensure that candidates can: • select the most appropriate software package for the task from the suite of software applications available • use routine instruction sets of the software package to complete the task • use software to analyse data such as quality control and instrument performance characteristics • back up electronic storage • use scanning software to protect in-house software and data.
Context of and specific resources for assessment	This unit of competency is to be assessed in the workplace or simulated workplace environment. This unit of competency may be assessed with: • *MSL925001A Analyse data and report results* • *relevant MSL974000 series units of competency* • *relevant MSL975000 series units of competency*. Resources may include: • access to a computer network or a personal computer • software packages that include a database package, spreadsheet, statistical analysis and simple graphics output • input and output data.
Method of assessment	The following assessment methods are suggested: • review of analysis tasks linking test results to the generation of meaningful reports by the candidate • review of simple statistical and/or graphical analysis of quality control data completed by the candidate • oral and written exercises in preparation for keyboard activities. In all cases, practical assessment should be supported by questions to assess underpinning knowledge and those aspects of competency which are difficult to assess

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	directly. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability. Access must be provided to appropriate learning and/or assessment support when required. The language, literacy and numeracy demands of assessment should not be greater than those required to undertake the unit of competency in a work like environment.
This competency in practice	Industry representatives have provided the case studies below to illustrate the practical application of this unit of competency and to show its relevance in a workplace setting. **Manufacturing** A laboratory technician performs tests on starting materials, such as appearance, identity, melting point, moisture content, trace elements, sulfated ash and assay. The results are entered in a computer database that allows trend analysis to be carried out on the test results for materials from each supplier. As a result, the technician may recognise when a supplier is experiencing potential problems with their production process. The technician would then notify the supervisor and/or supplier that there is a high probability that future supplies may be out of specification and that constant monitoring of starting materials will be required. **Biomedical** An important task of the technical officer in a pathology laboratory is to perform statistical analysis for quality control purposes. The software package provides for the input of data, analysis of mean value and variance as well as graphical reporting. The technical officer uses a dedicated software package or a package within the customised pathology data management system in order to assess the validity of the results produced from the analytical instrument. **Food processing** A technical officer is required to perform a nutrient analysis of a food product, the results of which will be

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	displayed on the food container. The output from the nutrient analysis is fed into a software program that calculates the levels of these components 'per portion' and 'per 100g' and displays the information in the correct tabular format. The software package is designed so that the technical officer can input new data or access existing data and manipulate that data to provide a full and accurate nutrient display or report.

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.	
Codes of practice	Where reference is made to industry codes of practice, and/or Australian/international standards, it is expected the latest version will be used
Information sources	Information sources may include: • manuals of enterprise standard instructions • hardware manuals • software manuals • training materials to orient software to enterprise needs • on-screen instructions embedded in the software
Software packages	Software packages may include: • word processing • spreadsheets • databases • graphical and statistical analysis • laboratory information systems
Occupational health and safety (OHS) and environmental management requirements	OHS and environmental management requirements: • all operations must comply with enterprise OHS and environmental management requirements, which may be imposed through state/territory or federal legislation - these requirements must not be compromised at any time • all operations assume the potentially hazardous nature of samples and require standard precautions to be applied • where relevant, users should access and apply current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and

RANGE STATEMENT	
	State and Territory Departments of Health

Unit Sector(s)

Unit sector	Data

Competency field

Competency field	

Co-requisite units

Co-requisite units		