PMLDATA501A Use laboratory application software

Release: 1
PMLDATA501A Use laboratory application software

Modification History
Not applicable.

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

Application of the Unit
Not applicable.

Licensing/Regulatory Information
Not applicable.

Pre-Requisites
Not applicable.

Employability Skills Information
Not applicable.

Elements and Performance Criteria Pre-Content
Not applicable.

Elements and Performance Criteria

<table>
<thead>
<tr>
<th>Element</th>
<th>Performance Criteria</th>
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<tbody>
<tr>
<td>1</td>
<td>Identify software required for the task</td>
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<tr>
<td></td>
<td>Open software from a personal computer or network terminal</td>
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<td></td>
<td>Use software for specified purposes</td>
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<tr>
<th></th>
<th>Produce reports of retrieved data and/or processed data</th>
<th>3.1 Analyse data using features of the software package</th>
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<td>3.2 Select options for constructing data reports</td>
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<td>3.3 Print the results of data analyses using features of the software package</td>
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<td>3.4 Integrate data from diverse application software units in a report</td>
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<td>3.5 Prepare reports of the rationale and history of a computerised database search where appropriate</td>
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<td>3.6 Reference computerised data sources according to the style requirements of the enterprise</td>
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<tr>
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<th>Perform simple record housekeeping</th>
<th>4.1 Maintain backup of worked data</th>
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<td>4.2 Maintain archive data according to enterprise standard procedures</td>
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<td>4.3 Maintain hard copy data according to standard enterprise operating procedures</td>
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<td>4.4 Use antivirus software and general standard quarantine procedures for important discs.</td>
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</tbody>
</table>

**Required Skills and Knowledge**

Not applicable.
Evidence Guide

Each unit of competency has an evidence guide that relates directly to the performance criteria and the range of variables. Its purpose is to guide assessment of the unit in the workplace and/or training program.

Critical aspects of competency

Cross industry

The following aspects of competency apply to all industry sectors covered by this Training Package.

Competency must be demonstrated in the ability to use software for the analysis, reporting and management of laboratory and field data and information. In particular, the assessor should look to see that the candidate:

- selects the most appropriate software package for the task
- uses routine instruction sets of the software package to complete the task
- uses software to analyse data such as quality control and instrument performance characteristics
- backs up electronic storage
- uses scanning software to protect in house software and data.

Essential knowledge

Cross industry

The following knowledge requirements apply to all industry sectors covered by this Training Package.

Competency includes the ability to apply and explain:

- the applications of the software package
- the terminology associated with the software packages
- the relationship between the package instructions and the data manipulation performed
- types of database models that are available
- the relationship between the protocol for data input and file storage of the data
- general file and record maintenance.

Assessment context

This unit of competency is to be assessed in the workplace or simulated workplace environment.

Interdependent assessment of unit

This unit of competency may be assessed with:

- PML DATA 500 A - Analyse data and report results
- Any unit in the PMX TEST "500 series".

This unit of competency should be assessed after:

- PML DATA 300 A - Process and record data.

Individual enterprises may choose to add other relevant prerequisites.

Assessment methods and resources

The following assessment methods are suggested:

- analysis tasks linking test results to the generation of meaningful reports
- simple statistical and/or graphical analysis of quality control data
- oral and written exercises in preparation for keyboard activities.

Resources may include:

- access to a computer network or a personal computer
- software packages that include a database package, spreadsheet, statistical analysis, simple graphics output.
This competency in practice
Industry representatives have provided storylines to illustrate the practical application of each unit of competency and show its relevance in a workplace setting.

Process manufacturing and construction materials industries
A laboratory technician performing tests on starting materials may test 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 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 unless appropriate steps are taken during the production process.

Biomedical and environmental services
A routine task of the technical officer in a pathology laboratory is to perform statistical analysis for QC 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 and beverage processing industries
A technical officer may be required to perform a nutrient analysis of a food portion using a software package, or add data using the database function of the package. The technical officer must be able to input new or accessed data and manipulate that data to provide a full nutrient display or report.

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Range Statement

The range of variables places each unit of competency in context and allows for differences between enterprises and workplaces, including practices, knowledge and requirements.

Cross industry variables

The following variables may apply to all industry sectors covered by this Training Package.

This unit of competency 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 technical officers would be able to customise the software to meet specific needs. However, they should be able to use software application features and instructions to input, save, analyse, sort, retrieve and display the records or data. They may also make use of in house software manuals to augment their skills and solve operational problems.

Information sources could include:
- manuals of enterprise standard instructions
- hardware manuals
- software manuals
- training materials to orient software to enterprise needs.

Software packages could include: word processing, spreadsheets, databases, graphical and statistical analysis and laboratory information systems.

Updating information

Changes in computer hardware and the expansion of multimedia facilities should not affect the structure of this unit of competency, but will modify some specific skills and knowledge.

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**Unit Sector(s)**

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