



Australian Government

FSKNUM037 Use introductory matrices for work

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with FSK Foundation Skills Training Package Version 2.0.

Application

This unit describes the skills and knowledge to use basic matrix calculations in workplace contexts, including practical workplace problems. It includes extracting and analysing information, undertaking mathematical processes with matrices, and communicating the mathematical information.

An individual performing these tasks works autonomously and accesses and evaluates support from a broad range of sources as needed.

This unit applies to individuals who use, or are preparing to use, numeracy skills to complete workplace activities. This includes existing workers and individuals preparing for employment through vocational education and training. This unit should be integrated and contextualised with vocational training to support achievement of vocational competency.

This unit is aligned to, but does not fully address, the Australian Core Skills Framework (ACSF) numeracy core skill indicators .09, .10 and .11 at level 5 in the workplace and employment domain of communication.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Numeracy

Elements and Performance Criteria

Element	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Extract and analyse mathematical information	1.1 Extract highly embedded mathematical information related to matrices from a broad range of highly complex workplace texts and tasks 1.2 Incorporate information from other sources to inform and support

Element	Performance Criteria
	analysis of the extracted information, where necessary 1.3 Analyse information in matrices to complete workplace task
2. Undertake mathematical processes using matrices for workplace tasks	2.1 Select method of solution from an expanded range of highly developed mathematical problem solving strategies and processes to complete workplace task 2.2 Estimate outcome of analysis related to using specialised mathematical problem solving strategies and matrix calculations to complete workplace task 2.3 Perform matrix calculations relevant to workplace tasks 2.4 Check outcomes and critically review mathematics used and real-world implications of results using developed estimation and evaluation techniques
3. Communicate information	3.1 Use formal and specialised written mathematical representation and symbolism to document, interpret and communicate mathematical thinking, problem solving process, outcomes and implications 3.2 Use specialised mathematical and general language to discuss, explain and interpret the mathematical processes, results and implications

Foundation Skills

This section describes language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Mapping Information

Supersedes and is equivalent to FSKNUM37 Use introductory matrices for work.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=f572fe10-a855-4986-9295-3852c771f178>

Assessment Requirements for FSKNUM037 Use introductory matrices for work

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- perform a broad range of multi-step mathematical problem solving processes with matrices to complete a workplace task, including:
 - constructing relevant matrices and performing matrix calculations
 - evaluating the determinant for square matrices
 - calculating the inverse of a matrix
 - using matrices to solve systems of equations
 - solving simultaneous equations using matrices
- make estimations to check problem solving outcomes and determine appropriate accuracy required for above workplace task
- critically review above mathematical processes and outcomes obtained, and evaluate real-world implications.
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Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- common types of matrices and use of matrices in workplace tasks
- features of matrices
- matrix calculations relevant to the workplace
- implications of calculations and results for workplace tasks
- developed estimation and evaluation processes
- specialised and formal mathematical language and symbolism relevant to workplace task.
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Assessment Conditions

Competency is to be assessed in the workplace, a workplace simulated environment or a vocational training context.

Assistive technologies can be utilised to assist with oral and written communication.

Skills must be demonstrated independently using highly complex texts and tasks that reflect those typically found in a workplace.

The following resources are to be made available:

- a scientific calculator
- own familiar support resources.

Assessors must:

- satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards, and
- have sound knowledge of the ACSF and performance features of the ACSF level being assessed, and
- have demonstrable expertise, knowledge and skills in the vocational contextualisation and assessment of the core skill, numeracy, and
- have completed the following or equivalent:
 - TAESS00009 Address Foundation Skills in Vocational Practice Skill Set; or
 - a higher level education qualification, such as:
 - TAE80113 Graduate Diploma of Adult Language, Literacy and Numeracy Practice (and its equivalent TAE70111); or
 - Bachelor of Education, Graduate Certificate or Graduate Diploma of Education, or higher. This may include qualifications relating to TESOL, adult education or vocational education.
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