



Australian Government

Department of Education, Employment and Workplace Relations

TLIE3026A Carry out advanced calculations in the transport logistics industry

Release: 1

TLIE3026A Carry out advanced calculations in the transport logistics industry

Modification History

Not applicable.

Unit Descriptor

This unit involves the skills and knowledge required to carry out advanced calculations. Licensing, legislative, regulatory and certification requirements are not applicable to this unit.

Application of the Unit

This unit applies to those working in the transport and logistics industry.

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Not applicable.

Employability Skills Information

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 required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Identify required calculations	1.1 Nature of calculation required and items involved are determined 1.2 Tools required to perform calculations are identified and sourced
2 Apply advanced calculations in workplace tasks	2.1 Calculations involving fractions, percentages and mixed numbers, using the four basic processes, are performed as required to complete workplace tasks 2.2 Numerical information is checked and corrected for accuracy
3 Prepare estimates	3.1 Quantities of materials and resources required to complete a work task are estimated and calculated accurately using fractions, percentages and mixed numbers 3.2 Accurate estimates for work completion are made using fractions, percentages and mixed numbers 3.3 Working load limits of workplace equipment are calculated using advanced calculations
4 Interpret graphical representations of mathematical information	4.1 Information represented in symbols, diagrams and pictorial representations is analysed, calculated and interpreted as relevant to the job role and function

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required knowledge:

- Relevant OH&S responsibilities
- Advanced mathematical operations and techniques
- Ways of representing advanced and complex mathematical information
- Procedures for identifying and using relevant workplace technology when carrying out workplace calculations
- Advanced mathematical problems, and appropriate action and solutions

Required skills:

- Interpret and follow operational instructions and prioritise work
- Complete documentation relating to work activities
- Work collaboratively with others when carrying out advanced workplace calculations
- Modify activities depending on differing operational contingencies and environments
- Work systematically with required attention to detail
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Estimate working load limits
- Make accurate estimates in a range of situations in the transport and logistics and heavy recovery industry
- Complex numeracy around job functions within transport and logistics
- Reading complex legislative and regulatory requirements
- using ratios and proportion and applying rates
- using multiple pieces of mathematical information to perform complex mathematical processes
- reading complex dials and indicators, non standard units of measurement, metric and imperial unit conversion, more advanced time estimates

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, the Range Statement and the Assessment section in Section B of the accreditation submission.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of:
 - calculate the mass and dimension of work function pertaining to the job role using fractions, percentages and mixed numbers
 - demonstrate the calculation of a load limit
 - interpret and analyse a workplace mathematical symbol

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
 - a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
 - access to an appropriate range of relevant operational situations in the workplace
- In both real and simulated environments, access is required to:
 - relevant and appropriate materials and equipment
 - applicable documentation, including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment

- As a minimum, assessment of knowledge must be conducted through appropriate assessments using written, practical and oral assessments
- Practical assessment must occur:
 - through activities in an appropriately simulated environment consistent with current industry practice, and/or
 - in an appropriate range of situations in the workplace

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. Add any 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.

Calculations may involve:

- volume
- weight
- time
- length and distance
- area
- perimeter

Tools required may include:

- calculator
- numeric keypad
- computer

Four basic processes are:

- addition
- subtraction
- division
- multiplication

Symbols, diagrams and pictorial representations include:

- graphic representation within transport and logistics operations
- spreadsheets
- pie charts
- horizontal winch pull
- vertical winch pull
- air cushion
- rolling recovery
- gradients

Working load limits include:

- horizontal winch pull
- vertical winch pull
- winch pull (leverage) required for recovery
- air cushion force (leverage) required for rollover recovery

Accurate estimates include:

- potential snapping path
- resistance
- rolling
- damage
- gradient
- mechanical advantage
- included angles

Mathematical operations may

- multiplication

include:

- division
- addition
- subtraction
- percentages
- fractions
- estimation

Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:

- company procedures
- enterprise procedures
- organisational procedures
- established procedures

Calculations may involve the basic use of a range of technology, including:

- manual techniques
- calculator
- computer

Information and documentation may include:

- workplace procedures, checklists and instructions
- goods identification numbers and codes
- manifests, bar codes, goods and container identification
- manufacturer specifications
- workplace policies
- supplier and client instructions
- material safety data sheets
- relevant codes of practice, including the National Standard for Manual Handling and the industry safety code
- award, enterprise bargaining agreement, other industrial arrangements
- standards and certification requirements
- quality assurance procedures

Applicable regulations and legislation may include:

- dangerous goods and freight regulations and codes
- relevant federal, state and territory OH&S legislation

Unit Sector(s)

Not applicable.

Competency Field

E – Communication and Calculation