Australian Government

Department of Education, Employment and Workplace Relations

AUMAKM5002 Produce computer-aided drawings

Release: 1

AUMAKM5002 Produce computer-aided drawings

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the application of the required skills and knowledge to produce drawings using computer aided drafting techniques, required in the design, development and production of bus/trucks/trailers. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit applies to the automotive and related component manufacturing environment and involves application of skills and knowledge to be used within the scope of the person's job and authority.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

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 required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Clarify computer-aided drawings (CAD) designer requirements	1.1. CAD project objectives are clarified and defined in accordance with ***organisation requirements*** 1.2. ***Relevant parameters*** are identified and interpreted 1.3. CAD requirements and processes are clarified based on consideration of project objectives and identified parameters
2. Select tools, equipment and computer hardware and software	2.1. Required computer hardware, software, tools, and equipment for the CAD project are selected and prepared in accordance with organisation procedures
3. Set up required CAD package	3.1. The required computer hardware for the CAD task is set up in accordance with manufacturer and organisation requirements 3.2. The CAD software package is installed in accordance with the software manufacturer instructions and statutory requirements 3.3. Files of digitised information relevant to the project are retrieved and converted if required
4. Gather object parameters and/or measurements	4.1. Any measurements of components, sub-assemblies, products, models, equipment, layouts or facilities needed for the preparation of the required drawings are made and recorded 4.2. Calculations of required dimensions and other drafting details based on measurements are made 4.3. ***Critical information*** relevant to the CAD project is identified
5. Prepare drawings	5.1. Critical dimensions and data for the required drawings are established 5.2. Preliminary sketches are prepared as required and reviewed with design, engineering, production and/or ***appropriate personnel*** 5.3. The CAD package is accessed using the necessary commands and protocol in accordance with the operating instructions of the CAD software manufacturer and organisation procedures 5.4. Peripheral equipment such as scanners, printers, plotters etc. are used as required 5.5. Complex ***2D and 3D computer graphics systems*** are used where required 5.6. The CAD package is used to prepare drawings consistent with the project objectives and specifications
6. Check drawings and save drawing files	6.1. Drawings are checked against project objectives, specifications and organisation standards 6.2. CAD data files are stored in accordance with organisation

ELEMENT	PERFORMANCE CRITERIA
	procedures and archiving requirements
7. Plot drawings	7.1. Computer plotter is activated in accordance with applicable computer hardware and peripheral equipment protocols 7.2. Retrieved information is correctly plotted in accordance with software application package instructions and task requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- speak clearly and directly in order to review preliminary sketches with appropriate personnel
- apply teamwork to a range of situations, including the gathering of object parameters and measurements
- solve problems particularly in teams in order to meet performance indicators
- show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work areas
- access, interpret and apply information on relevant organisation policies, procedures and instructions, particularly to ensure project objectives are defined in accordance with organisation requirements
- manage time when planning, preparing and organising work priorities
- take responsibility for organising own work priorities.

Required knowledge

- relevant Occupational Health and Safety and Environmental regulations and organisation policies and procedures needed to carry out work in a manner which ensures the safety of people, equipment and the environment.
- technical work documentation covering procedures, specifications, schedules and work plans or equivalent
- quality system documentation covering instructions, procedures, performance indicators and review processes or equivalent
- cost minimisation/waste avoidance policies, procedures and practices
- environmental protection requirements relating to the disposal of waste material
- established communication channels and protocols
- problem identification and resolution techniques
- processes to set up required CAD packages
- processes to gather object parameters and/or measurements
- processes to prepare CAD drawings
- processes to plot drawings.

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 Guidelines for this Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • compliance with relevant legislative, regulations, standards, codes of practice and establish safe practices and organisation policies and procedures for managing personal work priorities • maintaining a working knowledge of current work systems and practices • working and communicating effectively and positively with others involved in the work • applying, within authority, the requirements of the job or work role in relation to: • achieving production goals • achieving work quality goals • responding positively to changing work requirements • contributing effectively to cost reduction initiatives • effectively applying problem solving techniques • modify activities to cater for variations in organisation context and environment • clarify CAD requirements • select tools, equipment and computer hardware and software • set up required CAD package • gather object parameters and/or measurements • prepare drawings • check drawings • save electronic drawing files • plot drawings.
Context of and specific resources for assessment	• assessment of the competency should take place in a safe working environment in a passenger motor vehicle manufacturing plant or simulated environment using tools/equipment/machinery required for the production process without undue disruption to the production process • assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for

EVIDENCE GUIDE	
	this unit: • assessment methods must confirm consistency and accuracy of performance (over time and in a range of organisation relevant contexts) together with application of underpinning knowledge • assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • assessment may be applied under project related conditions (real or simulated) and require evidence of process • assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

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 in the Performance Criteria is detailed below. 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.	
Organisation requirements may include:	• access and equity principles and practices • environmental management (waste disposal, recycling and re-use guidelines) • emergency and evacuation procedures • equipment use procedures • ethical standards • legal obligations • maintenance and storage procedures • OHS requirements • organisational and site guidelines • policies and procedures relating to own role and responsibility • procedural manuals • quality assurance guidelines • quality and continuous improvement processes and standards • recording and reporting guidelines.
Relevant parameters may include:	• functional specifications • quality targets • materials • ergonomic considerations • documented standards • technical information • cost constraints • manufacturing processes.
Critical information may include:	• system accuracy • drafting standards • accepted tolerances.
Appropriate personnel may include:	• clients and managers • supervisors • suppliers • team leaders • team members.
2D and 3D computer graphics systems may	• file structures • menu utilisation

RANGE STATEMENT	
include:	• system library usage • data banking • archiving • file management and maintenance.

Unit Sector(s)

Unit sector	Technology (Computing) - Manufacture

Competency field

Competency field	Manufacturing - Common

Co-requisite units

Not applicable.