



Australian Government

Assessment Requirements for MEM09158 Perform mechatronics engineering design drafting

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM09158A Perform mechatronics engineering design drafting.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- producing drawings that are consistent with design drawing brief information and relevant Australian and international standards, codes and conventions
- selecting and applying design criteria to meet requirements of the design brief and confirming software and file formats to be used for design drawings with designer, detail draftspersons and stakeholders on at least two occasions
- developing orthographic, isometric and other 3D graphical representations
- representing mechatronic components and assemblies using sketching and computer graphics on at least two occasions
- representing mechatronic components and features using of standard conventions and graphical techniques on at least two occasions
- representing mechatronic assemblies using standard graphical representations on at least two occasions
- consulting with other personnel and stakeholders
- recognising when to engage appropriate licensed technical and professional assistance for advice
- providing documentation.

Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures
- engineering designers
- types of engineering drawings
- design drawing brief requirements

- application of the role of engineering design, design drafting and detail drafting in mechatronic tasks and projects including:
 - design specifications
 - mechatronic manufacture and maintenance procedures
 - technical specifications and descriptions
 - physical arrangement of mechanical, fluid, electrical and control elements
 - diagrammatic layouts of control circuits and actuator sequence
 - logical signal diagrams
- drawing and graphical representation techniques
- stakeholders in the design drafting process
- WHS and regulatory requirements, codes of practice, risk assessment and registration requirements relevant to mechatronic applications
- design criteria for mechatronic designs
- mechatronic components and features
- mechatronic assemblies
- standards for mechatronic design
- drawing features requiring licensed, technical or professional assistance
- worksite procedures for the processing and filing of drafting, specifications and operating and maintenance instructions/manuals
- methods of representing mechatronic components and assemblies using sketching and computer graphics including all relevant symbols, conventions and abbreviations
- worksite procedures for the processing and filing of graphics, specifications and operating and maintenance instructions or manuals
- organisation processes relating to supervision responsibilities during the production of detail drawings.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing mechatronics engineering design drafting at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the Standards for Registered Training Organisations 2015 or its replacement and comply with the National Vocational Education and Training Regulator Act 2011, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires.
- Where possible, assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions that cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required including relevant workplace procedures, product and manufacturing specifications.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>