

Industrial Technology Skills 2024

v1.2

L2: Project — Manufacturing engineering (Engineering Skills)

Sample assessment instrument

This sample has been compiled by the QCAA to assist and support teachers in planning and developing assessment instruments for individual school settings.

Schools develop internal assessments for each Applied subject, based on the learning and assessment described in the syllabus.

Student name

Student number

Teacher

Issued

Due date

Overall result

Result					Comment
A	B	C	D	E	

Conditions

Technique	Project
Unit	Unit option L: Production in the manufacturing engineering industry (Engineering Skills)
Response requirements	Manufacturing engineering product • Product: 1 manufacturing engineering product manufactured using the skills and procedures in 5–7 production processes Manufacturing process • Multimodal (at least two modes delivered at the same time): up to 5 minutes, 8 A4 pages, or equivalent digital media
Individual/group	Group
Other	Students can develop their responses in class time and their own time. The product manufacturing can be completed in groups. Students must be assessed individually. Students have access to materials, tools and equipment as required to complete the assessment.
Resources	Drawings and technical information to be provided by the classroom teacher.

Context

In the manufacturing engineering industry, the manufacture of engineering items involves the utilisation of a diverse range of materials for manufacturing engineering purposes. Tradespeople work with a range of engineering tools, machinery and equipment, and they recognise that products are manufactured using drawings and technical information that detail the expected quality standards of the final product, e.g. size, type and grade of metal and polymer, tolerances, fits, finish and joints.

Task

Manufacture a tractor/tray mounted machine or pipe vice that consists of multiple interconnected components and document the manufacturing process through a multimodal.

To complete this task you must:

- manufacture a manufacturing engineering product by
 - demonstrating manufacturing engineering production skills and procedures used in 5–7 production processes
 - selecting industry practices, production skills and procedures
 - adapting skills and procedures during production to meet the requirements in the drawings and technical information
- document the manufacturing process by
 - interpreting manufacturing engineering drawings and technical information for the manufacture of a manufacturing engineering product
 - deciding on the industry practices, and production skills and procedures required to manufacture the product
 - determining the sequence in which the production processes will be implemented
 - annotating sketches, photographs and/or video footage to capture decision-making
 - reflecting on the quality of the completed product, industry practices, and production skills and procedures used.

Stimulus

Detailed drawings and technical information provided by your teacher, e.g.

- orthographic views of the tractor/tray mounted machine or pipe vice
- isometric pictorials of the tractor/tray mounted machine or pipe vice
- assembly drawings or exploded views of the tractor/tray mounted machine or pipe vice
- technical information from industry-standard drawings and documents.

Checkpoints

- ☐ Term 2 Week 2: Establish production plans and the sequence of production processes.
- ☐ Term 2 Week 4: Evaluate production skills and procedures and adapt production plans.
- ☐ Term 2 Week 5: Submit tractor/tray mounted machine or pipe vice and multimodal.

Authentication strategies

- Your teacher will provide class time for task completion.
- You will provide documentation of your progress at indicated checkpoints.
- You must acknowledge all sources.
- You must submit a declaration of authenticity.
- Your teacher will ensure class cross-marking occurs.

Scaffolding

Further scaffolding information will be provided by your teacher, e.g.

- materials, tools and equipment risk assessments
- safety operating procedures (SOPs)
- material data safety sheets (MDSSs).

Instrument-specific standards (L2): Project — Manufacturing engineering

Demonstrate	Interpret	Select	Sequence	Evaluate	Adapt	Grade
The student response has the following characteristics:						
proficient demonstration of manufacturing engineering industry practices, and production skills and procedures when manufacturing a manufacturing engineering product	insightful and justified interpretation of manufacturing engineering drawings and technical information when manufacturing a manufacturing engineering product	discerning selection of manufacturing engineering industry practices, and production skills and procedures when manufacturing a manufacturing engineering product	strategic sequencing of manufacturing engineering production processes when manufacturing a manufacturing engineering product	insightful and justified evaluation of manufacturing engineering production skills, procedures and a manufacturing engineering product	insightful and justified adaptation of manufacturing engineering production plans, skills and procedures when manufacturing a manufacturing engineering product	A
efficient demonstration of manufacturing engineering industry practices, and production skills and procedures when manufacturing a manufacturing engineering product	detailed and supported interpretation of manufacturing engineering drawings and technical information when manufacturing a manufacturing engineering product	thorough selection of manufacturing engineering industry practices, and production skills and procedures when manufacturing a manufacturing engineering product	considered sequencing of manufacturing engineering production processes when manufacturing a manufacturing engineering product	detailed and supported evaluation of manufacturing engineering production skills, procedures and a manufacturing engineering product	detailed and supported adaptation of manufacturing engineering production plans, skills and procedures when manufacturing a manufacturing engineering product	B

Demonstrate	Interpret	Select	Sequence	Evaluate	Adapt	Grade
demonstration of manufacturing engineering industry practices, and production skills and procedures when manufacturing a manufacturing engineering product	interpretation of manufacturing engineering drawings and technical information when manufacturing a manufacturing engineering product	selection of manufacturing engineering industry practices, and production skills and procedures when manufacturing a manufacturing engineering product	sequencing of manufacturing engineering industry production processes when manufacturing a manufacturing engineering product	evaluation of manufacturing engineering production skills, procedures and a manufacturing engineering product	adaptation of manufacturing engineering production plans, skills and procedures when manufacturing a manufacturing engineering product	C
rudimentary demonstration of production skills and procedures when manufacturing an incomplete manufacturing engineering product with obvious inaccuracies.	narrow and unsupported reference to drawings when manufacturing an incomplete manufacturing engineering product with obvious inaccuracies.	inconsistent selection of production skills and procedures when manufacturing an incomplete manufacturing engineering product with obvious inaccuracies.	inconsistent sequencing of production skills or procedures when manufacturing an incomplete manufacturing engineering product with obvious inaccuracies.	narrow and unsupported evaluation of production skills, procedures, or an incomplete manufacturing engineering product with obvious inaccuracies.	narrow and unsupported adaptations to production skills or procedures when manufacturing an incomplete manufacturing engineering product with obvious inaccuracies.	D
The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	E



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