



Level 3 Diploma in

MANUFACTURING - ENGINEERING Machinist (Development Competence)

Qualification Specification

Overview

This qualification has been developed to provide learners with a skills and knowledge they will need to carry out the role of a machinist. It covers the relevant H&S requirements to ensure that all aspects of the machinist role can be carried out safely.

Typical Job

Machinist

Qualification code:	603/1034/0
Level:	3
TQT:	min 1,720 - max 2,320
Minimum learning age:	16



Purpose of qualification

What is this qualification?

This qualification is a competency qualification which sits on the National Qualification Framework (NQF) and has been approved by the Advanced Manufacturing and Engineering Sector employer groups which is made up of a range of employers, providers and professional institutions.

The qualification focuses on the skills, knowledge and behaviours required to achieve the development phase requirements of relevant apprenticeship standards. This arrangement ensures that when the learner completes the qualification they will have gained knowledge and practical experience of some of the situations that they could face within the occupational sector in which it is being delivered.

It covers specific skills knowledge and behaviours of a range of engineering disciplines which have been developed in consultation with engineering industry specialists and training providers to ensure that it meets the needs of industry employers and learners.

What does this qualification cover?

The content and structure of this qualification has been developed to provide the specific level of skills, knowledge and behaviours required to be achieved and assessed to demonstrate full occupational competence in the Development Phase of the apprenticeship. The qualification Units are listed in Section 3.

The qualification has a min 1,720- max 2,320 of Learning hours (both guided and non-guided).

The GL (hrs) values can include the following examples in line with regulatory requirements (this is not an exhaustive list and other examples could be used as outlined in regulatory guidance):

Supervised Teaching and Learning and Supervised Work-based Learning. All forms of assessment which takes place under immediate guidance or supervision of an appropriate individual (Lecturer, Supervisor, Tutor, Mentor, etc.), including where the assessment is competence based and may be turned into a learning opportunity.

- Supervised E-Learning, Oral and written questioning, Workplace induction.
- Supervised work: Student works under supervision of employer/direct supervisor.
- Final assessment: Student is supervised by employer/direct supervisor during the assessment.

Who is this qualification for?

- Learners who are working towards a relevant apprenticeship standard.
- Learners who are looking to advance to the development phase of a relevant apprenticeship standard.

Who supports the qualification?

This qualification is:

- Accredited by Ofqual at level 3.
- Supported by SEMTA.
- Supported by Advanced Manufacturing and Engineering Sector.

What could this qualification lead to?

Typical job roles include:

- Conventional machinist or CNC machinist.
- This qualification will provide progression onto other suitable and appropriate level 3 and level 4 Engineering qualifications.

Entry requirements

Learners must be at least 16 years old. There are no formal entry requirements for this qualification; however centres should ensure that the learners have the potential to achieve this qualification. Learners must have the minimum levels of literacy and numeracy to complete the learning outcomes and the external assessment.

Centres should make learners with particular requirements aware of the content of the qualification and they should be given every opportunity to successfully complete the qualification. EAL will consider any reasonable suggestions for, and from, those with disabilities that would help them to achieve the learning outcomes without compromising the standards required.

When used as part of an apprenticeship standard, apprentices must have achieved the requirements of the foundation phase of the apprenticeship in line with the apprenticeship standard they are working towards.

How is the qualification achieved?

The qualification is achieved when all the necessary units have been completed. The centre will then be able to apply for the learner's certificate of achievement. The learners will also receive a certificate of unit credit, listing all the units they have achieved.

What will be assessed?

This qualification is gained when all the performance, skills, knowledge and behaviours have been demonstrated across the assessment criteria for each unit selected.

The assessment criteria within the Units of Competence have been specifically developed to cover a wide range of activities relevant to the role carried out by a machinist.

The evidence produced for the units will, therefore, depend on the skills and knowledge required by an employer and specified in the Apprentices Training Plan.

Grading criteria

This qualification is not graded, learners can achieve a Pass or be Referred.

To achieve a pass, learners must be able to demonstrate their performance, skills, knowledge and behaviours across all units mandatory and optional units.

How will it be assessed?

Performance evidence must be a product of the Apprentices work, such as items that have been produced or worked on, plans, charts, reports, standard operating procedures, documents produced as part of a work activity, records or photographs of the completed activity together with evidence of the way the Apprentice carried out the activities, such as witness testimonies, assessor observations or authenticated Apprentice reports of the activity undertaken.

Knowledge and understanding are key components of competent performance, but it is unlikely that performance evidence alone will provide enough evidence in this area. Where the Apprentices knowledge and understanding is not apparent from performance evidence, it must be assessed by other means and be supported by suitable evidence.

Structure

This qualification can be obtained by the learner by completing all **three** mandatory units plus a minimum of **four** optional units.

Mandatory Units: *All three mandatory units must be completed*

EAL Code	Unit Title	GL(hrs)	Ofqual Code
AUEC3-001	Complying with Statutory Regulations and Organisational Safety Requirements	13	Y/615/3996
AUEC3-002	Using and Interpreting Engineering Data and Documentation	13	D/615/3997
AUEC3-003	Working Efficiently and Effectively in Advanced Manufacturing and Engineering	42	K/615/3999

Optional Units:

One machining pathway must be chosen from either Conventional Machining or CNC Machining :

Conventional machining

A minimum of **One** functional pair of optional units must be chosen from the following:

One functional pair of optional units is a minimum requirement; therefore employers may require their apprentices to achieve more units in order to meet their specific business needs.

EAL Code	Unit Title	GL(hrs)	Ofqual Code
AUEC3-163	Setting Centre Lathes	889	T/615/4704
AUEC3-164	Machining Components using Centre Lathes	749	A/615/4705
AUEC3-165	Setting Milling Machines	889	F/615/4706
AUEC3-166	Machining Components using Milling Machines	749	J/615/4707
AUEC3-167	Setting Electro-Discharge Machines	889	L/615/4708
Unit 168	Machining Components using Electro-Discharge Machines	749	R/615/4709
AUEC3-169	Setting Grinding Machines	889	L/615/4711
AUEC3-170	Machining Components using Grinding Machines	749	D/615/4714

Optional Units: Continued

CNC Machining

One optional unit must be completed from the following:

AUEC3-171	Loading and Proving CNC Machine Tool Programs	217	T/615/4718
AUEC3-172	Carrying Out CNC Machine Tool Programming	819	A/615/4719

Plus a minimum of **one** functional pair of optional units from the following:

AUEC3-173	Setting CNC Turning Machines	679	M/615/4720
AUEC3-174	Machining Components using CNC Turning Machines	609	T/615/4721

AUEC3-175	Setting CNC Milling Machines	679	L/615/4787
AUEC3-176	Machining Components using CNC Milling Machines	609	A/615/4722

AUEC3-177	Setting CNC Grinding Machines	679	F/615/4723
AUEC3-178	Machining Components using CNC Grinding Machines	609	J/615/4724

AUEC3-179	Setting CNC Punching Machines	679	K/615/4795
AUEC3-180	Machining Components using CNC Punching Machines	609	M/615/4801

AUEC3-181	Setting CNC Laser Profiling Machines	679	F/615/4804
AUEC3-182	Machining Components using CNC Laser Profiling Machines	609	Y/615/4808

AUEC3-183	Setting CNC Electro-Discharge Machines	679	M/615/4815
AUEC3-184	Machining Components using CNC Electro-Discharge Machines	609	A/615/4817

AUEC3-185	Setting CNC Vertical Boring Machines	679	A/615/4820
AUEC3-186	Machining Components using CNC Vertical Boring Machines	609	J/615/4822

Optional Units: Continued

AUEC3-187	Setting CNC Horizontal Boring Machines	679	R/615/4824
AUEC3-188	Machining Components using CNC Horizontal Boring Machines	609	M/615/4846
AUEC3-189	Setting CNC Gear Cutting Machines	679	K/615/4828
AUEC3-190	Machining Components using CNC Gear Cutting Machines	609	H/615/4830
AUEC3-191	Setting CNC Machining Centres	679	M/615/4832
AUEC3-192	Machining Components using CNC Machining Centres	609	A/615/4834
AUEC3-193	Setting CNC Fabrication Equipment	679	F/615/4835
AUEC3-194	Producing Components using CNC Fabrication Equipment	609	L/615/4837

Three optional units is a minimum requirement; therefore employers may require their apprentices to achieve more units in order to meet their specific business needs.