

600/3427/0 - ETCAL Level 3 NVQ Diploma in Engineering Toolmaking (QCF)

1 Introduction to the Qualification

1.1 Who is the qualification for?

- This qualification has been designed to cover those learners who are:
 - employed but require additional engineering competencies as part of an existing job role or to enable career progression.

1.2 Learner entry requirements

There are no formal entry requirements for learners undertaking this qualification. However, centres must ensure that learners have the potential and opportunity to gain the qualification successfully.

1.3 Age restrictions

This qualification is not approved for use by learners under the age of 16, and ETA cannot accept any registrations for learners in this age group.

1.4 What does the qualification cover?

- Mandatory units cover those areas which have a common approach such as organisational safety requirements, team working and using technical information
- There are 5 optional pathways, Toolmaker, Toolroom CNC Machining, Mould, Tool and Die Equipment Maintenance, Jig and Fixture Manufacture and Toolroom Manual Machining offering a choice of units applicable to individual workplaces and working environments

2 Qualification Structure

Learners must achieve a minimum of 105 credits to gain the qualification. 15 credits must be achieved by completing the 3 mandatory units and the remaining credits achieved by completing the unit requirements from the selected pathway.

Mandatory Units – all units must be completed

Ofqual code	Unit Title	Level	CV	GLH
A/601/5013	Complying with Statutory Regulations and Organisational Safety Requirements	2	5	35
Y/601/5102	Using and Interpreting Engineering Data and Documentation	2	5	25
K/601/5055	Working Efficiently and Effectively in Engineering	3	5	25

Toolmaker Optional Pathway – 1 unit must be selected from the following.

Ofqual code	Unit Title	Level	CV	GLH
F/602/2562	Assembling Press Tools	3	70	210
L/602/2564	Assembling Injection Mould Tools	3	70	210
R/602/2565	Assembling Blow Mould Tools	3	70	210
K/602/2569	Assembling Vacuum Forming Tools	3	70	210
D/602/2570	Assembling Dies	3	70	210

Toolmaker Optional Pathway – plus 2 more units must be selected from the following.

H/602/2571	Producing/Finishing Mould, Press Tool or Die Components using Hand Fitting Techniques	3	70	210
L/602/2581	Repairing or Modifying Mould, Press Tool or Die Components	3	70	210
R/602/2582	Producing Mould, Press Tool or Die Components by Manual Machining	3	70	210
J/602/2644	Checking that Toolroom Assemblies Comply with Specification	3	30	91
L/602/2645	Handing Over and Confirming the Completion of Mould, Press Tool or Die Equipment	3	38	98
K/602/2653	Preparing and Setting Power Presses	3	91	210
M/602/2654	Trying Out and Proving Dies	3	70	210
T/602/2655	Trying Out and Proving Injection Moulds	3	70	210

Toolroom CNC Machining Optional Pathway – 1 unit must be selected from the following.

Y/602/3006	Loading and Proving CNC Machine Tool Programs	3	24	91
H/602/3008	Carrying Out CNC Machine Tool Programming	3	84	231

Toolroom CNC Machining Optional Pathway – plus 1 more unit must be selected from the following.

J/602/2658	Producing Toolroom Components using CNC Turning Machines	3	66	140
T/602/2672	Producing Toolroom Components using CNC Milling Machines	3	66	140
A/602/2673	Producing Toolroom Components using CNC Grinding Machines	3	66	140

F/602/2688	Producing Toolroom Components using CNC Laser Profiling Machines	3	66	140
F/602/2691	Producing Toolroom Components using CNC Electro-Discharge Machines	3	66	140
L/602/2693	Producing Toolroom Components using CNC Machining Centres	3	66	140
Mould, Tool and Die Equipment Maintenance Mandatory Pathway – all 3 units must be selected.				
R/602/2694	Carrying Out Fault Diagnosis on Mould, Press Tool or Die equipment	3	49	56
Y/602/2695	Maintaining Mould, Press Tool or Die Equipment	3	70	119
D/602/2696	Handing Over and Confirming the Completion of Mould, Press Tool or Die Equipment Maintenance Activities	3	38	98
Mould, Tool and Die Equipment Maintenance Optional Pathway – plus 2 more units must be selected from the following.				
L/602/2581	Repairing or Modifying Mould, Press Tool or Die Components	3	70	210
R/602/2582	Producing Mould, Press Tool or Die Components by Manual Machining	3	70	210
K/602/2653	Preparing and Setting Power Presses	3	91	210
K/602/2698	Carrying Out Condition Monitoring of Mould, Press Tool or Die Equipment	3	39	77
M/602/2699	Carrying Out Planned Maintenance on Mould, Press Tool or Die Equipment	3	38	70
D/602/2777	Carrying Out Planned Maintenance on Power Presses	3	70	119
Jig and Fixture Manufacture Optional Pathway – 3 units must be selected from the following.				
J/602/2787	Producing Jig and Fixture Components using Hand Fitting Techniques	3	70	210
L/602/2788	Machining Components for Jigs and Fixtures	3	70	210
R/602/2789	Fabricating Structural Components for Jigs and Fixtures	3	54	216
M/602/2802	Assembling Jigs and Fixtures using Mechanical Methods	3	70	210
F/602/2805	Assembling Jig and Fixture Structures using a Manual Welding Process	3	54	216
L/602/2807	Carrying Out Repairs or Modifications to Jigs or Fixtures	3	70	210

J/602/2644	Checking that Toolroom Assemblies Comply with Specification	3	30	91
Toolroom Manual Machining Optional Pathway – a <u>pair</u> of units must be selected from the following.				
Y/602/2809	Setting a Range of Machines to Produce Toolroom Components	3	164	378
H/602/2831	Machining Toolroom Components using a Range of Machines	3	139	294
T/602/2834	Setting Centre Lathes to Produce Toolroom Components	3	91	210
A/602/2835	Machining Toolroom Components using Centre Lathes	3	77	161
J/602/2837	Setting Milling Machines to Produce Toolroom Components	3	91	210
F/602/2951	Machining Toolroom Components using Milling Machines	3	77	161
L/602/2953	Setting Electro-Discharge Machines to Produce Toolroom Components	3	91	210
Y/602/2955	Machining Toolroom Components using Electro-Discharge Machines	3	77	161
D/602/2956	Setting Grinding Machines to Produce Toolroom Components	3	91	210
H/602/2957	Machining Toolroom Components using Grinding Machines	3	77	161

2.1 Unit requirements are available as a separate document

2.2 Unit Endorsement

These units are endorsed by the Sector Skills Council for Science, Engineering and Manufacturing Technologies (SEMTA).

3 Centre & Qualification Approval

Centres wishing to offer the qualification will need to gain ETA's approval to do so. Current ETA centres can do this via Quartz Web. For non ETA Centres to gain approval to run the qualification please provide your details via <http://quartz.etawards/quartz-system.com> and the ETA team will start the process of approval.

4 Resource Requirements

4.1 Assessors

Assessment must be carried out by competent assessors who hold, or are working towards, a current assessor qualification. They will be expected to regularly review their skills, knowledge and understanding and, where applicable, undertake continuing professional development to ensure that they are carrying out workplace assessment to the most up to date national occupational standards.

Assessors must be able to demonstrate that they have relevant and sufficient technical competence to evaluate and judge performance and knowledge evidence of this qualification, the units being taken and the associated assessment criteria. This will be demonstrated either by holding a relevant technical qualification or by proven experience in the learner's industry. The assessor's competence must, at the very least, be at the same level as that required of the learner in the assessment so that they are able to demonstrate the skills needed.

4.2 Internal Quality Assurance Advisors

Internal quality assurance (IQA) must be carried out by competent quality assurers who should hold or be working towards, a current internal quality assurance qualification. They will be expected to regularly review their skills, knowledge and understanding and, where applicable, undertake continuing professional development to ensure that they are carrying out workplace assessment to the most up to date national occupational standards.

Persons carrying out the role of internal quality assurance will also be expected to be fully conversant with the ETA requirements for IQA in centres. These are detailed in the centre manual.

IQAAs must be able to demonstrate that they have relevant and sufficient technical competence to understand performance and knowledge evidence of this qualification, the units being taken and the associated assessment criteria. This will be demonstrated either by holding a relevant technical qualification or by proven experience in the learner's industry. The IQAA's competence must be sufficient to recognise what constitutes acceptable performance, knowledge and understanding as required by this qualification.

4.3 External Quality Assurance Advisors

ETA will appoint an appropriately qualified person to provide advice and guidance to the centre team and act as their external quality assurance advisor (EQAA).

External quality assurance (EQA) must be carried out by competent quality assurers who should hold, or be working towards, a current external quality assurance qualification. They will be expected to regularly review their skills, knowledge and understanding and where applicable undertake continuing professional development to ensure that they are carrying out workplace assessment to the most up to date national occupational standards.

EQAAs must be able to demonstrate that they have relevant and sufficient technical competence to recognise performance and knowledge evidence of this qualification as required by the units being taken and the associated assessment criteria.

4.4 Assessment environment

The evidence of a learner's competence, knowledge and understanding for this qualification can only be regarded as valid, reliable, sufficient and authentic if demonstrated in a real working environment.