

601/1821/0 - ETCAL Level 3 NVQ Diploma in Engineering Technical Support (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 6 optional pathways, Engineering Drawing, Quality Control, Non-Destructive Testing, Computer Control Programming, Integrated Business Operational Support and Engineering Software Development offering a choice of units applicable to individual workplaces and working environments

2 Qualification Structure

Learners must achieve a minimum of 123 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

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

Ofqual code	Unit Title	Level	CV	GLH
H/600/5415	Producing Mechanical Engineering Drawings using Computer Aided Techniques	3	150	294
H/600/5429	Producing Engineering Drawings/Models using 3D Computer Aided Techniques	3	150	294
H/600/5463	Producing Electrical Engineering Drawings using Computer Aided Techniques	3	150	294
F/600/5471	Producing Electronic Engineering Drawings using Computer Aided Techniques	3	150	294
M/600/5482	Producing Fabrication/Structural Engineering Drawings using Computer Aided Techniques	3	150	294
Y/600/5489	Producing Fluid Power Engineering Drawings using Computer Aided Techniques	3	150	294
M/600/5496	Producing Engineering Systems/Services Drawings using Computer Aided Techniques	3	150	294

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

Y/600/5511	Inspecting Mechanical Products	3	142	287
F/600/5535	Inspecting Components using Co-Ordinate Measuring Machines (CMM)	3	140	287
F/600/5549	Inspecting Fabricated Components and Structures	3	142	287
K/600/5559	Carrying Out Visual Inspection of Welded Fabrications	3	142	287
J/600/5570	Inspecting and Testing Electrical Products	3	142	287
J/600/5603	Inspecting and Testing Electronic Products	3	142	287
K/600/5612	Checking and Calibrating Mechanical Inspection Equipment	3	139	287
L/600/5618	Checking and Calibrating Electrical and Electronic Test Equipment	3	139	287
H/600/5625	Checking and Calibrating Process Control Instrumentation	3	139	287

Non-Destructive Testing Optional Pathway – must select either one of the following pairs of units				
L/600/5666	Preparing Ultrasonic Flaw Detection Equipment for Testing Activities	3	36	91
H/600/5673	Inspecting Engineering Products using Ultrasonic Testing Techniques	3	82	189
OR				
2 units must be selected from the following.				
A/600/5632	Determining Technical Requirement for Non-Destructive Testing	3	65	168
T/600/5645	Specifying Non-Destructive Testing Instructions for Inspection Activities	3	70	168
L/600/5652	Inspecting Engineering Products by Penetrant Flaw Detection Techniques	3	52	119
K/600/5660	Inspecting Engineering Products by Magnetic Particle Testing	3	82	189
K/600/5688	Analysing and Interpreting the Results of Radiographic Tests	3	70	168
Computer Control Programming Optional Pathway - 1 unit must be selected from the following.				
M/600/5692	Providing Operational Support for Computer Control Programs	3	54	106
A/600/5694	Loading and Proving Computer Control Programs	3	24	91
Computer Control Programming Optional Pathway – plus 1 more unit must be selected from the following.				
H/600/5706	Producing Operating Programs for Co-ordinate Measuring Machines (CMM)	3	84	231
K/600/5710	Producing Off-line Programs for Programmable Logic Controller Equipment	3	84	231
Y/600/5718	Producing Operating Programs for Industrial Robots	3	84	231
Y/600/5721	Producing Off-line Programs for NC/CNC Laser Profiling Machines	3	84	231

A/600/5727	Producing Off-line Programs for NC/CNC Fabrication Machines	3	84	231
A/600/5730	Producing Off-line Programs for NC/CNC Turning Machines	3	84	231
Y/600/5735	Producing Off-line Programs for NC/CNC Milling Machines	3	84	231
H/600/5737	Producing Off-line Programs for NC/CNC Grinding Machines	3	84	231
H/600/5740	Producing Off-line Programs for NC/CNC Gear Cutting Machines	3	84	231
T/600/5743	Producing Off-line Programs for NC/CNC Electro-Discharge Machining	3	84	231
L/600/5747	Producing Off-line Programs for NC/CNC Boring Machines	3	84	231
L/600/5750	Producing Off-line Programs for NC/CNC Machining Centres	3	84	231
Integrated Business Operational Support Mandatory Pathway - 1 unit must be selected.				
T/505/1790	Resolving Engineering Problems	3	40	96
Integrated Business Operational Support Optional Pathway – plus 3 more units must be selected from the following, 1 of which must selected from:				
Group A				
T/600/5760	Planning Engineering Activities	3	40	106
J/600/5763	Implementing Engineering Activities	3	40	106
D/600/5767	Monitoring Engineering Activities	3	40	106
R/505/1795	Producing Technical Information for Engineering Activities	3	40	106
A/600/5775	Obtaining Resources for Engineering Activities	3	40	106
R/600/5779	Obtaining and Controlling Materials for Engineering Activities	3	40	106
Y/505/1796	Providing Technical Sales and Marketing Support for Engineering Activities	3	40	106
H/600/5785	Implementing Quality Control Systems and Procedures in an Engineering Environment	3	40	106
A/505/1791	Scheduling Engineering Activities	3	40	106
F/600/5793	Determining Engineering Requirements for the Supply of Products or Services	3	40	106
R/600/5796	Carrying out Condition Monitoring of Engineering Plant and Equipment	3	39	81
D/600/5798	Carrying out Fault Diagnosis on Engineering Plant and Equipment	3	50	60

L/505/1794	Supporting Logistics Operations in an Engineering Manufacturing Environment	3	40	106
Up to 2 units may be selected from:				
Group B				
R/600/5801	Providing Technical Advice and Guidance on Engineering Activities	3	40	106
F/505/1792	Carrying out Project Management of Engineering Activities	3	40	106
D/600/5803	Developing and Maintaining Effective Customer Relationships	3	20	35
H/600/5804	Handing Over and Exchanging Responsibility for Control of Engineering Activities	3	20	35
K/600/5805	Carrying out Health and Safety Risk Assessments on Engineering Activities	3	40	106
J/505/1793	Producing Contractual Arrangements to Supply or Procure Goods or Services for Engineering Activities	3	40	106
D/505/1797	Using and maintaining Business Procedures and Protocols in an Engineering Environment	3	40	106
Engineering Software Development Mandatory Pathway – all 4 units must be selected.				
D/601/2864	Determining Engineering Software Requirements	3	40	71
T/601/2871	Producing Engineering Software Design	3	50	99
F/601/2887	Producing Engineering Software Implementation	3	40	71
F/601/2890	Testing Engineering Software	3	50	99
Engineering Software Development Optional Pathway – plus 1 more unit must be selected from the following				
J/601/2891	Performing Engineering Software Analysis Techniques	3	50	99
L/601/2892	Measuring Engineering Software Quality	3	40	71
Y/601/2894	Performing Engineering Software Configuration Management	3	50	99
D/601/2895	Performing Engineering Software Acquisition	3	40	71
M/601/2898	Performing Engineering Software Safety Assessments	3	40	71
A/601/2905	Performing Low Level Programming for Engineering Software	3	50	99
F/601/2906	Performing Computer System Security Assessments for Engineering Software	3	40	71

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.