



ETCAL Level 2 NVQ Diploma in Performing Engineering Operations
601/1688/2
Structure

Qualification aim

This qualification is designed to support those learners training in Performing Engineering Operations, however, it is also available for individuals who are not following an apprenticeship. It provides a structured individualised route with knowledge and skills for those who wish to achieve a qualification in Performing Engineering Operations.

Qualification introduction

This qualification is made up of 3 mandatory units that will help learners to develop an understanding of the available and relevant to their capabilities and aspirations. Its mandatory units form a foundation to extend the understanding and skills in specific areas through the optional routes, in addition to these learners are required to achieve additional units selected from a suite of 2 Pathways and in accordance with the achievement definition. Learners who complete the qualification will be equipped with the knowledge and skills to underpin career development within the industry.

Assessment

In order to achieve this qualification a learner must complete all units as mandatory. The assessment criteria determine the standard required to achieve each unit and allow for a variety of assessment methods to be used as appropriate to the environment the qualification is delivered in. There is no examined assessment element in this qualification.

Achievement

Learners must achieve a minimum of 40 credits to gain the qualification. 13 credits must be achieved by completing the 3 mandatory units and the remaining credits achieved by completing the required optional units from the suite of Pathways.

Qualification Number		601/1688/2
Qualification Framework		RQF
Title		ETCAL Level 2 NVQ Diploma in Performing Engineering Operations
Qualification Level		Level 2
Total Qualification Time		400 TQT
Guided Learning Hours		214 GLH
Qualification Credit Value		40 Credits
Qualification Grading Structure		Pass / Fail

Unit Title	Mandatory/Optional	GLH	TQT	Credit Value	Grading
Mandatory Group – all three units must be completed:					
Working Safely in an Engineering Environment	M	33		5	Pass/Fail
Carrying Out Engineering Activities Efficiently and Effectively	M	29		4	Pass/Fail
Using and Communicating Technical Information	M	29		4	Pass/Fail
Optional Units: Candidates must complete three more units from the following:					
Note: Only one unit from 4, 32 and 61 may be included in the candidate's choice of three.					
If unit 65 is selected units 5, 6, 8, 11, 12, 15, 16, 17 cannot be included in the learner's choice of three units.					
If unit 66 is selected units 10, 22, 23, 25, 26, 27, 28, 29, 30, 34 cannot be included in the learner's choice of three units.					
If unit 67 is selected units 33, 35, 36, 40 cannot be included in the learner's choice of three units.					
If unit 68 is selected units 19, 21, 37, 38, 39, 40, 58, 59 cannot be included in the learner's choice of three units.					
Producing Mechanical Engineering Drawings using a CAD System	O	61		11	Pass/Fail
Producing Components using Hand Fitting Techniques	O	64		14	Pass/Fail
Producing Mechanical Assemblies	O	68		15	Pass/Fail
Forming and Assembling Pipework Systems	O	64		14	Pass/Fail
Carrying Out Aircraft Detail Fitting Activities	O	64		14	Pass/Fail
Installing Aircraft Mechanical Fasteners	O	61		11	Pass/Fail
Producing Aircraft Detail Assemblies	O	64		14	Pass/Fail
Preparing and Using Lathes for Turning Operations	O	68		15	Pass/Fail
Preparing and Using Milling Machines	O	68		15	Pass/Fail

Preparing and Using Grinding Machines	O	68		15	Pass/Fail
Preparing and Proving CNC Machine Tool Programs	O	64		14	Pass/Fail
Preparing and Using CNC Turning Machines	O	64		14	Pass/Fail
Preparing and Using CNC Milling Machines	O	64		14	Pass/Fail
Preparing and Using CNC Machining Centres	O	64		14	Pass/Fail
Preparing and Using Industrial Robots	O	64		14	Pass/Fail
Maintaining Mechanical Devices and Equipment	O	64		14	Pass/Fail
Assembling and Testing Fluid Power Systems	O	64		14	Pass/Fail
Maintaining Fluid Power Equipment	O	64		14	Pass/Fail
Producing Sheet Metal Components and Assemblies	O	64		14	Pass/Fail
Producing Platework Components and Assemblies	O	64		14	Pass/Fail
Cutting and Shaping Materials using Thermal Cutting Equipment	O	64		14	Pass/Fail
Preparing and Proving CNC Fabrication Machine Tool Programs	O	64		14	Pass/Fail
Preparing and Using CNC Fabrication Machinery	O	64		14	Pass/Fail
Preparing and Using Manual Metal Arc Welding Equipment	O	68		15	Pass/Fail
Preparing and Using Manual TIG or Plasma-arc Welding Equipment	O	68		15	Pass/Fail
Preparing and Using Semi-automatic MIG, MAG and Flux cored arc Welding Equipment	O	68		15	Pass/Fail
Preparing and Using Manual Gas Welding Equipment	O	64		14	Pass/Fail
Preparing and Using Manual Flame Brazing and Bronze Welding Equipment	O	61		11	Pass/Fail
Producing Electrical or Electronic Engineering Drawings using a CAD System	O	61		11	Pass/Fail
Wiring and Testing Electrical Equipment and Circuits	O	64		14	Pass/Fail
Forming and Assembling Electrical Cable Enclosure and Support Systems	O	65		13	Pass/Fail
Assembling, Wiring and Testing Electrical Panels/Components Mounted in Enclosures	O	64		14	Pass/Fail
Assembling and Testing Electronic Circuits	O	64		14	Pass/Fail
Maintaining Electrical Equipment/Systems	O	68		15	Pass/Fail
Maintaining Electronic Equipment/Systems	O	68		15	Pass/Fail
Maintaining and Testing Process Instrumentation and Control Devices	O	68		15	Pass/Fail
Wiring and Testing Programmable Controller Based Systems	O	68		15	Pass/Fail
Using Wood for Pattern, Modelmaking and Other Engineering Applications	O	68		15	Pass/Fail
Assembling Pattern, Model and Engineering Woodwork Components	O	64		14	Pass/Fail
Producing Composite Mouldings using Wet Lay-up Techniques	O	64		14	Pass/Fail

Producing Composite Mouldings using Pre-Preg Laminating Techniques	O	64		14	Pass/Fail
Producing Composite Mouldings using Resin Infusion Techniques	O	64		14	Pass/Fail
Producing Composite Assemblies	O	64		14	Pass/Fail
Producing Components by Rapid Prototyping Techniques	O	61		11	Pass/Fail
Producing and Preparing Sand Moulds and Cores for Casting	O	64		14	Pass/Fail
Producing and Preparing Molten Materials for Casting	O	64		14	Pass/Fail
Producing Cast Components by Manual Means	O	65		13	Pass/Fail
Fettling, Finishing and Checking Cast Components	O	61		11	Pass/Fail
Finishing Surfaces by Applying Coatings or Coverings	O	41		9	Pass/Fail
Finishing Surfaces by Applying Treatments	O	41		9	Pass/Fail
Carrying Out Heat Treatment of Engineering Materials	O	41		9	Pass/Fail
Carrying Out Hand Forging of Engineering Materials	O	41		9	Pass/Fail
Stripping and Rebuilding Motorsport Vehicles (Pre-Competition)	O	64		14	Pass/Fail
Inspecting a Motorsport Vehicle During a Competition	O	64		14	Pass/Fail
Diagnosing and Rectifying Faults on Motorsport Vehicle Systems (During Competition)	O	68		15	Pass/Fail
Carrying out Maintenance Activities on Motorsport Vehicle Electrical Equipment	O	68		15	Pass/Fail
Stripping and Rebuilding Motorsport Engines (Pre-Competition)	O	64		14	Pass/Fail
Producing CAD Models (Drawings) using a CAD System	O	61		11	Pass/Fail
General Machining, Fitting and Assembly Applications	O	55		12	Pass/Fail
General Fabrication and Welding Applications	O	55		12	Pass/Fail
General Electrical and Electronic Engineering Applications	O	55		12	Pass/Fail
General Maintenance Engineering Applications	O	55		12	Pass/Fail
Joining Public Service Vehicle Components by Mechanical Processes	O	61		11	Pass/Fail
Assembling Structural Sub-Assemblies to Produce a Public Service Vehicle	O	64		14	Pass/Fail
Fitting Sub-Assemblies and Components to Public Service Vehicles	O	64		14	Pass/Fail
Preparing and Manouvering Fighting Vehicles AFVs for Maintenance and Transportation	O	64		14	Pass/Fail
Producing Composite Mouldings using Resin Film Infusion Techniques	O	64		14	Pass/Fail
Technical Support Pathway - Mandatory units: All three units must be completed					
Working Safely in an Engineering Environment	M	33		5	Pass/Fail
Carrying Out Engineering Activities Efficiently and Effectively	M	29		4	Pass/Fail
Using and Communicating Technical Information	M	29		4	Pass/Fail

Optional Units - Must complete one of the following units:					
Producing Mechanical Engineering Drawings using a CAD System	O	61		11	Pass/Fail
Producing Electrical or Electronic Engineering Drawings using a CAD System	O	61		11	Pass/Fail
Producing CAD Models (Drawings) using a CAD System	O	61		11	Pass/Fail
Plus two more of the following units:					
Producing Engineering Project Plans	O	37		8	Pass/Fail
Using Computer Software Packages to Assist with Engineering Activities	O	37		8	Pass/Fail
Conducting Business Improvement Activities	O	41		8	Pass/Fail
Plus two more units from the following:					
General Machining, Fitting and Assembly Applications	O	55		12	Pass/Fail
General Fabrication and Welding Applications	O	55		12	Pass/Fail
General Electrical and Electronic Engineering Applications	O	55		12	Pass/Fail
General Maintenance Engineering Applications	O	55		12	Pass/Fail