



ETCAL Level 3 NVQ Diploma in Electrical and Electronic Engineering
601/1661/4
Structure

Qualification aim

This qualification is designed to support those learners training in Electrical and Electronic Engineering, 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 Electrical and Electronic Engineering.

Qualification introduction

This qualification is made up of 3 mandatory units that will help learners to develop an understanding of the knowledge and skills required as 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 11 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

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 90 credits to gain the qualification. 15 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		601/1661/4
Qualification Framework		RQF
Title		ETCAL Level 3 NVQ Diploma in Electrical and Electronic Engineering
Qualification Level		Level 3
Total Qualification Time		900 TQT
Guided Learning Hours		309 GLH
Qualification Credit Value		90 Credits
Qualification Grading Structure		Pass / Fail

Unit Title	Mandatory/Optional	GLH	TQT	Credit Value	Grading
Mandatory Group – all units must be completed					
Complying with Statutory Regulations and Organisational Safety Requirements	M	35		5	Pass/Fail
Using and Interpreting Engineering Drawings and Documents	M	25		5	Pass/Fail
Working Efficiently and Effectively in Engineering	M	25		5	Pass/Fail
Designing Electronic Circuits - Must three of the following units to be taken:					
Designing Electronic Circuit Board Layouts Using CAD Tools	O	126		60	Pass/Fail
Evaluating and Recommending Circuit Design Options	O	154		70	Pass/Fail
Providing Technical Guidance to Others	O	70		35	Pass/Fail

Controlling Semiconductor Manufacturing Processes - All three of the following units to be taken:					
Identifying and Following Clean Room/Clean Work Area Protocols	O	28		7	Pass/Fail
Monitoring and Analysing Data from Semiconductor Processes	O	77		35	Pass/Fail
Adjusting and Sustaining Semiconductor Processes	O	77		40	Pass/Fail
Plus one unit from the following:					
Selecting and Preparing Materials and Components for Manufacturing	O	63		18	Pass/Fail
Preparing Manufacturing Systems Equipment for Operations	O	63		18	Pass/Fail
Providing Technical Guidance to Others	O	70		35	Pass/Fail
Controlling Printed Circuit and Allied Circuit Assembly - All three of the following units to be taken:					
Identifying and Following Clean Room/Clean Work Area Protocols	O	28		7	Pass/Fail
Monitoring and Analysing Data from Electronic Circuit Manufacturing Processes	O	77		35	Pass/Fail
Adjusting and Sustaining Electronic Circuit Manufacturing Processes	O	77		40	Pass/Fail
Plus one unit from the following:					
Selecting and Preparing Materials and Components for Manufacturing	O	63		18	Pass/Fail
Preparing Manufacturing Systems Equipment for Operations	O	63		18	Pass/Fail
Providing Technical Guidance to Others	O	70		35	Pass/Fail
Leading Electronic Component Manufacture - Both of the following units to be taken:					
Providing Technical Guidance to Others	O	70		35	Pass/Fail
Processing Electronic Components within the Manufacturing System	O	126		50	Pass/Fail
Plus one more from the following:					
Selecting and Preparing Materials and Components for Manufacturing	O	63		18	Pass/Fail
Preparing Manufacturing Systems Equipment for Operations	O	63		18	Pass/Fail
Checking the Compliance of Electronic Components Against the Specification	O	56		20	Pass/Fail
Leading Printed Circuit and Allied Circuit Assembly - All three of the following units to be taken:					
Providing Technical Guidance to Others	O	70		35	Pass/Fail
Identifying and Following Clean Room/Clean Work Area Protocols	O	28		7	Pass/Fail
Assembling and Checking Printed and Allied Electronic Circuits	O	98		55	Pass/Fail
Plus one more from the following:					
Selecting and Preparing Materials and Components for Manufacturing	O	63		18	Pass/Fail
Preparing Manufacturing Systems Equipment for Operations	O	63		18	Pass/Fail

Leading Electronics Assembly - Both of the following units to be taken:					
Providing Technical Guidance to Others	O	70		35	Pass/Fail
Assembling and Wiring Electronic Equipment and Systems	O	84		45	Pass/Fail
Plus one unit from the following:					
Selecting and Preparing Materials and Components for Manufacturing	O	63		18	Pass/Fail
Preparing Manufacturing Systems Equipment for Operations	O	63		18	Pass/Fail
Testing Electronic Circuits - Both of the following units to be taken:					
Testing Post-Production Electronic Components and Circuits	O	77		45	Pass/Fail
Locating and Diagnosing Faults in Post-Production Electronic Components and Circuits	O	77		45	Pass/Fail
Plus one unit from the following:					
Preparing Facilities for Testing Electronic Components and Circuits	O	63		18	Pass/Fail
Writing Specifications for Testing Electronic Components or Circuits	O	70		30	Pass/Fail
Providing Technical Guidance to Others	O	70		35	Pass/Fail
Manufacturing Transformers and Inductors - Two of the following units to be taken:					
Assembling Large Transformer and Inductor Cores	O	126		55	Pass/Fail
Winding Transformer and Inductor Coils	O	112		45	Pass/Fail
Assembling Transformers and Inductors	O	119		48	Pass/Fail
Fitting Small Transformer and Inductor Cores	O	112		30	Pass/Fail
Manufacturing Electrical Motors and Generators - Four of the following units to be taken:					
Assembling Rotor and Armature Windings	O	56		25	Pass/Fail
Assembling Stator Windings	O	56		25	Pass/Fail
Assembling and Fitting Commutators	O	42		20	Pass/Fail
Balancing Assembled Rotors or Armatures	O	63		30	Pass/Fail
Assembling and Fitting Electrical Rotating Equipment	O	105		50	Pass/Fail
Manufacturing Electrical Control Systems Equipment - All three of the following units to be taken:					
Mounting Electrical Components in Enclosures	O	133		55	Pass/Fail
Wiring Electrical Components and Equipment in Enclosures	O	147		60	Pass/Fail
Selecting and Preparing Materials and Components for Electrical Assembly	O	63		18	Pass/Fail
Testing Electrical Equipment - All three of the following units to be taken:					
Carrying Out Functional Tests on Electrical Equipment	O	105		50	Pass/Fail
Locating and Diagnosing Faults in Electrical Systems and Equipment	O	105		50	Pass/Fail
Checking the Compliance of Electrical Equipment Against the Specification	O	56		20	Pass/Fail