



ETCAL Level 3 Diploma in Engineering  
601/6010/X  
Structure

## Qualification aim

This qualification is aimed at individuals who wish to follow an apprenticeship or Advanced apprenticeship, employees who are looking for career progression within the engineering industry or individuals who wish to further develop their skills.

## 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 54 credits to gain the qualification. 18 credits must be achieved by completing the 2 mandatory units in Group A. A minimum of 18 credits from Option Group B, with a maximum of 7 credits from Option Group B. With the final 18 credits being from one of the 8 Pathways.

<b>Qualification Number</b>		601/6010/X
<b>Qualification Framework</b>		RQF
<b>Title</b>		ETCAL Level 3 Diploma In Engineering
<b>Qualification Level</b>		Level 3
<b>Total Qualification Time</b>		540 TQT
<b>Guided Learning Hours</b>		480 GLH
<b>Qualification Credit Value</b>		54 Credits
<b>Qualification Grading Structure</b>		Pass / Fail

Unit Title	Mandatory/Optional	GLH	TQT	Credit Value	Grading
<b>Mandatory Group – both units must be completed</b>					
Engineering health and safety	M	80		9	Pass/Fail
Engineering Principles	M	80		9	Pass/Fail
<b>Option Group B – The learner must achieve a minimum of 18 credits from this group</b>					
Manual metal arc welding of materials	O	80		9	Pass/Fail
MIG welding of materials	O	80		9	Pass/Fail
TIG welding of materials	O	80		9	Pass/Fail
Platework fabrication of materials	O	80		9	Pass/Fail
Sheet Metalwork fabrication of materials	O	80		9	Pass/Fail
Fabrication and erection of structural steelwork	O	80		9	Pass/Fail
Pattern development for fabrication	O	80		9	Pass/Fail
Maintenance of machine systems	O	80		9	Pass/Fail
Maintenance of Utility systems	O	80		9	Pass/Fail
Maintenance of plant services	O	80		9	Pass/Fail
Maintenance of hydraulic systems	O	80		9	Pass/Fail
Maintenance of pneumatic systems	O	80		9	Pass/Fail
Power generation systems and ancillary equipment	O	80		9	Pass/Fail
Machining materials by turning	O	80		9	Pass/Fail
Machining materials by milling	O	80		9	Pass/Fail
Machining materials by grinding	O	80		9	Pass/Fail
CNC machining of materials	O	80		9	Pass/Fail
Detailed fitting of materials	O	80		9	Pass/Fail
Maintenance of electrical equipment and systems	O	80		9	Pass/Fail

Produce drawing using CAD	O	80		9	Pass/Fail
Organising and managing engineering operations	O	80		9	Pass/Fail
Advanced mathematics and science	O	80		9	Pass/Fail
Mechatronics systems principles and fault finding	O	80		9	Pass/Fail
Computer automated and robotic systems principles and control	O	80		9	Pass/Fail
Power supply and analogue and digital circuit principles and fault finding	O	80		9	Pass/Fail
Electronic power control principles and practice	O	80		9	Pass/Fail
MIG welding of aluminium	O	80		9	Pass/Fail
TIG welding of aluminium	O	80		9	Pass/Fail
Flux-cord arc welding of materials	O	80		9	Pass/Fail
<b>Option Group C – Welding - The learner must achieve 18 credits from one of the optional pathway groups</b>					
<b>This mandatory unit must be completed</b>					
Principles of Welding	M	80		9	Pass/Fail
<b>The remainder of the credits for this pathway must be taken from the group below</b>					
Manual metal arc welding of materials	O	80		9	Pass/Fail
MIG welding of materials	O	80		9	Pass/Fail
TIG welding of materials	O	80		9	Pass/Fail
<b>Option Group D – Fabrication - this mandatory unit must be completed</b>					
Principles of Fabrication	M	80		9	Pass/Fail
<b>The remainder of the credits for this pathway must be taken from the group below</b>					
Platework fabrication of materials	O	80		9	Pass/Fail
Sheet metalwork fabrication of materials	O	80		9	Pass/Fail
Fabrication and erection of structural steelwork	O	80		9	Pass/Fail
Pattern development for fabrication	O	80		9	Pass/Fail
<b>Option Group E – Fabrication and Welding - this mandatory unit must be completed</b>					
Principles of Fabrication and Welding	M	80		9	Pass/Fail
<b>The remainder of the credits for this pathway must be taken from the group below</b>					
Manual metal arc welding of materials	O	80		9	Pass/Fail
MIG welding of materials	O	80		9	Pass/Fail

TIG welding of materials	O	80		9	Pass/Fail
Platework fabrication of materials	O	80		9	Pass/Fail
Sheet metalwork fabrication of materials	O	80		9	Pass/Fail
Fabrication and erection of structural steelwork	O	80		9	Pass/Fail
Pattern development for fabrication	O	80		9	Pass/Fail
<b>Option Group F – Engineering Maintenance - this mandatory unit must be completed</b>					
Principles of Engineering Maintenance, Installation and commissioning	M	80		9	Pass/Fail
<b>The remainder of the credits for this pathway must be taken from the group below</b>					
Maintenance of machine systems	O	80		9	Pass/Fail
Maintenance of Utility systems	O	80		9	Pass/Fail
Maintenance of plant services	O	80		9	Pass/Fail
Maintenance of hydraulic systems	O	80		9	Pass/Fail
Maintenance of pneumatic systems	O	80		9	Pass/Fail
Power generation systems and ancillary equipment	O	80		9	Pass/Fail
<b>Option Group G – Manufacturing Engineering - this mandatory unit must be completed</b>					
Principles of mechanical manufacturing engineering	M	80		9	Pass/Fail
<b>The remainder of the credits for this pathway must be taken from the group below</b>					
Machining materials by turning	O	80		9	Pass/Fail
Machining materials by milling	O	80		9	Pass/Fail
Machining materials by grinding	O	80		9	Pass/Fail
CNC machining of materials	O	80		9	Pass/Fail
Detailed fitting of materials	O	80		9	Pass/Fail

<b>Option Group H – Electrical and Electronic Engineering - this mandatory unit must be completed</b>					
Principles of Electrical and electronic engineering	M	80		9	Pass/Fail
<b>The remainder of the credits for this pathway must be taken from the group below</b>					
Maintenance of electrical equipment and systems	O	80		9	Pass/Fail
Mechatronics systems principles and fault finding	O	80		9	Pass/Fail
Computer automated and robotic systems principles and control	O	80		9	Pass/Fail
Power supply and analogue and digital circuit principles and fault finding	O	80		9	Pass/Fail
Electronic power control principles and practice	O	80		9	Pass/Fail
<b>Option Group I – Shipbuilding - this mandatory unit must be completed</b>					
Principles of shipbuilding	M	80		9	Pass/Fail
<b>The remainder of the credits for this pathway must be taken from the group below</b>					
Manual metal arc welding of materials	O	80		9	Pass/Fail
MIG welding of materials	O	80		9	Pass/Fail
TIG welding of materials	O	80		9	Pass/Fail
Platework fabrication of materials	O	80		9	Pass/Fail
Sheet metalwork fabrication of materials	O	80		9	Pass/Fail
Fabrication and erection of structural steelwork	O	80		9	Pass/Fail
Pattern development for fabrication	O	80		9	Pass/Fail
Maintenance of machine systems	O	80		9	Pass/Fail
Maintenance of utility systems	O	80		9	Pass/Fail
Maintenance of plant services	O	80		9	Pass/Fail
Maintenance of hydraulic systems	O	80		9	Pass/Fail
Maintenance of pneumatic systems	O	80		9	Pass/Fail
Power generation systems and ancillary equipment	O	80		9	Pass/Fail
<b>Option Group J – Composites - these mandatory units must be completed</b>					
Principles of composite materials	M	80		9	Pass/Fail
Principles of composite manufacture	M	80		9	Pass/Fail