

Level 3 NVQ Extended Diploma in **Automotive Engineering**

Qualification Specification

Overview

This qualification involves the skills and knowledge to work effectively in a range of automotive engineering activities. It also includes level 2 Performing Engineering Operations (PEO) units to provide essential basic engineering training for apprentices in England and Wales.

Typical Job

Motorsport Technician (mechanical, electrical/electronic), vehicle builder, vehicle development technician, vehicle test technician.

Qualification code:	600/1784/3
Level:	3
Total qualification time:	1430 Hours
Guided learning hours:	453
Credits:	143
Minimum age	16



Purpose of the qualification

This qualification enables learners to:

- Develop skills and competencies relating to their specific role
- Meet the competence requirement of Semta's engineering manufacture apprenticeship at level 3 for the automotive pathway
- Gain a recognised qualification to support their progress to further learning and greater responsibility in the workplace.

What does this qualification cover?

Learners will take three mandatory units, a choice of three PEO engineering practices or five PEO technical support units, and one of nine job-specific pathways. These pathways cover a wide range of areas including vehicle fitting and body building, vehicle electric and electronic wiring and assembly, commercial and passenger carrying vehicle body building, and experimental/new model development.

Who is this qualification designed for?

Learners working towards an engineering manufacture Apprenticeship at level 3 in England or Wales

What could this qualification lead to?

On completion of this qualification it can form part of an apprenticeship framework at Level 3, providing a base for other level 3 qualifications, and progression to a range of Level 4 qualifications.

Entry Requirements

Learners must have the potential to achieve the assessment criteria set out in the units.

How is the qualification achieved?

The learner must present evidence (portfolio) which clearly shows they have met the assessment criteria and learning outcomes. The learner must achieve the mandatory and optional units relevant to their pathway (occupational role).

What will be assessed?

All evidence submitted by the learner against the assessment criteria.

How will it be assessed?

The assessment of the PEO units takes place in a sheltered environment, while the level 3 units are assessed in the workplace via observation and the collation of evidence in a portfolio.

Structure

Structure of the EAL Level 3 NVQ Extended Diploma

The Extended Diploma is comprised of a Level 3 Engineering Qualification **extended** by inclusion of technically specific PEO Units as follows:-

Mandatory Units - A combination of Level 2 & 3

Group A - Level 2 PEO Units x 3

OR

Group B - Level 2 PEO Units x 5

And

Group C - One of the Automotive Engineering pathways

Delivery requirements

In the context of the Apprenticeship Framework, the technically specific level 2 PEO units **must** be delivered and assessed in a sheltered work environment **before** starting delivery and assessment of the level 3 components in the working environment.

PEO:

To support these basic engineering skills and techniques, the learner must be trained in, and continuously practice the relevant Health and Safety, engineering communication requirements along with all the other Mandatory Unit(s) listed within that qualification. The Learner cannot be signed off as being competent for these units in this period.

Level 3:

On completion of the PEO2 Units, the Learner moves on to the Units from the Level 3 qualification which can only be assessed within a workplace environment.

This qualification will be achieved when the learner has successfully completed the common mandatory Assessment routes followed by the required number of optional Assessment routes.

EAL code	Assessment route title	Level	Credit value	Guided learning hours	Ofqual code
QAUE3/001	Complying with Statutory Regulations and Organisational Safety Requirements	2	5	35	A/601/5013
QAUE3/002	Using and Interpreting Engineering Data and Documentation	2	5	25	Y/601/5102
QAUE3/003	Working Efficiently and Effectively in Engineering	3	5	25	K/601/5055

Mandatory assessment routes: All four assessment routes must be completed

Group A (Engineering practices)

Optional Units: Learners must complete three more units from the following

Notes:

Only one unit from **4**, **32** and **61** may be included in the learner's choice of three units.

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

QPE02/004N	Producing Mechanical Engineering	2	11	61	F/504/6348
	Drawings using a CAD System				
QPE02/005N	Producing Components using Hand	2	14	64	J/504/6349
	Fitting Techniques				
QPE02/006N	Producing Mechanical Assemblies	2	15	68	F/504/6351
QPE02/007N	Forming and Assembling Pipework	2	14	64	L/504/6353
	Systems				
QPE02/008N	Carrying Out Aircraft Detail Fitting	2	14	64	R/504/6354
	Activities				
QPE02/009N	Installing Aircraft Mechanical	2	11	61	L/504/6367
	Fasteners				
QPE02/010N	Producing Aircraft Detail Assemblies	2	14	65	L/504/6370
QPE02/011N	Preparing and Using Lathes for	2	15	68	Y/504/6372
	Turning Operations				
QPE02/012N	Preparing and Using Milling Machines	2	15	68	K/504/6375

QPE02/013N	Preparing and Using Grinding Machines	2	15	68	T/504/6377
QPE02/014N	Preparing and Proving CNC Machine Tool Programs	2	14	64	F/504/6379
QPE02/015N	Preparing and Using CNC Turning Machines	2	14	64	F/504/6382
QPE02/016N	Preparing and Using CNC Milling Machines	2	14	64	L/504/6384
QPE02/017N	Preparing and Using CNC Machining Centres	2	14	64	D/504/6387
QPE02/018N	Preparing and Using Industrial Robots	2	14	64	D/504/6390
QPE02/019N	Maintaining Mechanical Devices and Equipment	2	14	64	T/504/6394
QPE02/020N	Assembling and Testing Fluid Power Systems	2	14	64	J/504/6397
QPE02/021N	Maintaining Fluid Power Equipment	2	14	64	F/504/6401
QPE02/022N	Producing Sheet Metal Components and Assemblies	2	14	64	J/504/6402
QPE02/023N	Producing Platework Components and Assemblies	2	14	64	L/504/6403
QPE02/024N	Cutting and Shaping Materials using	2	14	64	R/504/6404
QPE02/025N	Preparing and Proving CNC Fabrication Machine Tool Programs	2	14	64	Y/504/6405
QPE02/026N	Preparing and Using CNC Fabrication Machinery	2	14	64	D/504/6406
QPE02/027N F	Preparing and Using Manual Metal Arc Welding Equipment	2	15	68	K/504/6408
QPE02/028N	Preparing and Using Manual TIG or Plasma-arc Welding Equipment	2	15	68	M/504/6409
QPE02/029N	Preparing and Using Semi-automatic MIG, MAG and Flux cored arc Welding equipment	2	15	68	H/504/6410
QPE02/030N	Preparing and Using Manual Oxy/fuel Gas Welding Equipment	2	14	64	Y/504/6419
QPE02/031N	Preparing and Using Manual Flame Brazing and Braze Welding Equipment	2	11	61	L/504/6420
QPE02/032N	Producing Electrical or Electronic Engineering Drawings using a CAD System	2	11	61	R/504/6421
QPE02/033N	Wiring and Testing Electrical	2	14	64	Y/504/6422
QPE02/034N	Forming and Assembling Electrical Cable Enclosure and Support Systems	2	13	65	D/504/6423
QPE02/035N	Assembling, Wiring and Testing Electrical Panels/Components Mounted in enclosures	2	14	64	H/504/6424

QPE02/036N	Assembling and Testing Electronic Circuits	2	14	64	K/504/6425
QPE02/037N	Maintaining Electrical	2	15	68	M/504/6426
	Equipment/Systems				
QPE02/038N	Maintaining Electronic	2	15	68	T/504/6427
	Equipment/Systems				

QPE02/039N	Maintaining and Testing Process	2	15	68	A/504/6428
00500 (0.400)	Instrumentation and Control Devices		15	<u> </u>	E (E 0.4.(0.400
QPE02/040N	Wiring and Testing Programmable	2	15	68	F/504/6429
	Light Wood for Dattorn Modelmaking	0	15	60	T/504/6420
QPE02/04TN	Using wood for Pallern, Modelmaking	Z	15	68	1/504/6430
	Accompling Dettern Model and	0	11	C A	A /EO 4 /C 401
QPEUZ/U4ZN	Assembling Pattern, Model and	Z	14	04	A/504/6431
	Engineering woodwork Components	0	11	61	F/F04/6422
QPEUZ/043N	Wet Levup Techniques	Z	14	04	F/504/0432
	Wet Lay-up Techniques	0	11	C A	1/504/6424
QPEUZ/044N	Producing composite Mouldings using	Z	14	04	L/504/0434
	Pre-Prey Laminating Techniques	0	11	64	D/E01/612E
QPEUZ/045IN	Producing composite Mouldings using	Z	14	04	K/004/0400
	Resili Flow Infusion Techniques	0	11	61	V/E01/6126
(PEUZ/0401)	Producing composite Assemblies	Z	14	04	1/304/0430
QPE02/047N	Producing Components by Rapid	2	11	61	D/504/6437
	Prototyping Techniques				
QPE02/048N	Producing and Preparing Sand Moulds	2	14	64	H/504/6438
	and Cores for Casting				
QPE02/049N	Producing and Preparing Molten	2	14	64	K/504/6439
	Materials for Casting				
QPE02/050N	Producing Cast Components by	2	13	65	D/504/6440
	Manual Means				
QPE02/051N	Fettling, Finishing and Checking Cast	2	11	61	H/504/6441
	Components				
QPE02/052N	Finishing Surfaces by Applying	2	9	41	M/504/6443
	Coatings or Coverings				
QPE02/053N	Finishing Surfaces by Applying	2	9	41	T/504/6444
	Treatments				
QPE02/054N	Carrying Out Heat Treatment of	2	9	41	A/504/6445
	Engineering Materials				
QPE02/055N	Carrying Out Hand Forging of	2	9	41	F/504/6446
	Engineering Materials				
QPE02/056N	Stripping and Rebuilding Motorsport	2	14	64	J/504/6447
	Vehicles (Pre-Competition)				
QPE02/057N	Inspecting a Motorsport Vehicle	2	14	64	L/504/6448
	During Competition				
QPE02/058N	Diagnosing and Rectifying Faults on	2	15	68	R/504/6449
	Motorsport Vehicle Systems (During a				
	Competition)				
QPE02/059N	Carrying Out Maintenance Activities	2	15	68	J/504/6450
	on Motor Vehicle Electrical Equipment				
QPE02/060N	Stripping and Rebuilding Motorsport	2	14	64	L/504/6451
	Engines (Pre – Competition)				
QPE02/061N	Producing CAD Models (Drawings)	2	11	61	R/504/6452
	using a CAD System				
QPE02/065N	General Machining, Fitting and	2	12	55	K/504/6456
	Assembly Applications				
QPE02/066N	General Fabrication and Welding	2	12	55	M/504/6457
	Applications				

QPE02/067N	General Electrical and Electronic	2	12	55	T/504/6458
	Engineering Applications				

QPE02/068N	General Maintenance Engineering	2	12	55	A/504/6459
	Applications				
QPE02/069N	Joining Public Service Vehicle	2	11	61	L/503/4056
	Components by Mechanical Processes				
QPE02/070N	Assembling Structural Sub Assemblies	2	14	64	R/503/4057
	to Produce a Public Service Vehicle				
QPE02/071N	Fitting Sub Assemblies and	2	14	64	Y/503/4058
	Components to Public Service Vehicles				
QPE02/072N	Preparing and Manoeuvring Armoured	2	14	64	R/503/7198
	Fighting Vehicles AFVs for				
	Maintenance and Transportation				
QPE02/073N	Producing Composite Mouldings using	2	14	64	J/504/3404
	Resin Film Infusion Techniques				
QPE02/073N	Producing Composite Mouldings using Resin Film Infusion Techniques	2	14	64	J/504/3404

Or

Group B: (Technical Support)

Learners must complete one of the following PEO Level 2 assessment routes:

QPE02/004N	Producing Mechanical Engineering Drawings using a CAD System	2	11	61	F/504/6348
QPE02/032N	Producing Electrical or Electronic Engineering Drawings using a CAD System	2	11	61	R/504/6421
QPE02/061N	Producing CAD Models (Drawings) using a CAD System	2	11	61	R/504/6452

Plus two from the following PEO Level 2 assessment routes:

QPE02/062N	Producing Engineering Project Plans	2	8	37	Y/504/6453
QPE02/063N	Using Computer Software Packages to Assist with Engineering Activities	2	8	37	D/504/6454
QPE02/064N	Conducting Business Improvement Activities	2	8	41	H/504/6455

Plus two more from the following PEO Level 2 assessment routes:

QPE02/065N	General Machining, Fitting and Assembly Applications	2	12	55	K/504/6456
QPE02/066N	General Fabrication and Welding	2	12	55	M/504/6457
	Applications				
QPE02/067N	General Electrical and Electronic	2	12	55	T/504/6458
	Engineering Applications				
QPE02/068N	General Maintenance Engineering	2	12	55	A/504/6459
	Applications				

In addition to the PEO Level 2 unit requirement in Group A or B, learners must complete the unit requirements for one of the following Level 3 Aeronautical Engineering Pathways

Group C:

Pathway QAUA: Vehicle Fitting

Optional assessment routes: Three of the following assessment routes must be taken:

QAUE3/004	Assembling Sub-Assembly Units to Vehicles	3	55	98	T/600/5807
QAUE3/005	Assembling Power Plant Units	3	55	98	A/600/5808
QAUE3/006	Assembling the Rear Axle Sub-Assembly	3	55	98	F/600/5809
QAUE3/007	Assembling the Front Suspension Sub- Assembly	3	55	98	T/600/5810
QAUE3/008	Assembling Braking Systems to Vehicles	3	55	98	A/600/5811

Pathway QAUB: Vehicle Body Building

Optional assessment routes: Both of the following assessment routes must be taken:

OAUE3/009	Assembling Vehicle Body Sub-	3	60	105	F/600/5812
.		-			.,
	Assemblies				
QAUE3/010	Assembling Body Sub-Assemblies to	3	70	119	H/600/5818
		-	-	-	
	Produce a Vehicle				

Pathway QAUC: Vehicle Electrical and Electronic Wiring and Assembly

Optional assessment routes: All three of the following assessment routes must be taken:

QAUE3/013	Assembling and Fitting Wiring Looms to Vehicles	3	55	98	A/600/5825
QAUE3/014	Assembling Electrical and Electronic Equipment to Vehicles	3	60	105	L/600/5828
QAUE3/015	Diagnosing and Rectifying Faults in Vehicle Electrical and Electronic Systems	3	58	105	R/600/5832

Pathway QAUD: Composite Manufacture

Optional assessment routes: Three of the following assessment routes must be taken:

QAUE3/023	Manufacturing Vehicle Composite Mouldings using Wet Lay-Up Techniques	3	86	210	Y/600/5850
QAUE3/024	Manufacturing Vehicle Composite Mouldings using Pre-Preg Laminating Techniques	3	86	210	H/600/5852
QAUE3/025	Manufacturing Vehicle Components by Resin Casting	3	86	210	L/601/5050
QAUE3/026	Manufacturing Vehicle Components by Vacuum Forming	3	50	98	K/600/5853
QAUE3/027	Manufacturing Vehicle Components by Acrylic Moulding	3	50	98	T/600/5872
QAUE3/028	Assembling Composite Vehicle Components	3	86	210	R/600/5877
QAUE3/029	Bonding Vehicle Composite Components	3	30	52	D/600/5882
QAUE3/030	Trimming Vehicle Composite Mouldings using Hand Tools	3	46	105	L/600/5893
QAUE3/031	Repairing Defects in Vehicle Composite Mouldings	3	77	161	K/600/5898
QAUE3/032	Applying Finishes to Vehicle Composite Mouldings	3	46	105	K/600/5903

Pathway QAUE: Experimental/New Model Development

Marking Out Components for 3 21 77 F/600/5910 QAUE3/033 **Experimental Vehicle Engineering** QAUE3/034 3 55 105 Hand Fitting Techniques to Produce K/600/5920 **Components for Experimental Vehicle** Engineering QAUE3/035 Assembling and Disassembling 3 70 126 J/600/5942 Mechanical Equipment on Experimental Vehicles QAUE3/036 and Disassembling Electrical and 3 70 126 R/600/5958 Electronic Equipment on Experimental Vehicles Assembling Body Sub-Assemblies to QAUE3/010 3 70 119 H/600/5818 Produce a Vehicle QAUE3/037 Fabricating Structural Components for 3 60 119 Y/600/5962 **Experimental Vehicle Engineering** QAUE3/038 Machining Components for 3 70 126 F/600/5969 **Experimental Vehicle Engineering** QAUE3/039 Cutting and Shaping Sheet Metal for 3 60 119 D/600/5977 **Experimental Vehicle Engineering** Assembling Structures for Experimental QAUE3/040 3 20 56 T/600/5984 Vehicle Engineering using Mechanical Fasteners QAUE3/041 Assembling Structures for Experimental 3 60 168 R/600/5992 Vehicle Engineering using a Manual Welding Process 3 7 QAUE3/042 Assembling Components for 35 A/600/5999 Experimental Vehicle Engineering by **Resistance Spot Welding** QAUE3/043 Assembling Components for 3 35 84 A/600/6005 Experimental Vehicle Engineering by Manual Torch Brazing and Soldering Plus: One of the following assessment routes must be taken: 53 QAUE3/044 Carrying Out Fault Diagnosis on 3 105 J/600/6010 **Experimental Vehicles** OAUE3/045 Conducting and Monitoring Static Tests 3 105 60 Y/600/6013 on Vehicles QAUE3/046 Conducting and Monitoring Road Tests 3 60 105 H/600/6015 on Vehicles

Optional assessment routes: Four of the following assessment routes must be taken:

Pathway QAUF: Commercial and Passenger Carrying Vehicle Body Building

Optional assessment routes: Two of the following assessment routes must be taken:

	Carrying Vehicle Body Sub-Assemblies				
QAUE3/048	Assembling Commercial and Passenger Carrying Vehicle Body Sub-Assemblies to Produce a Vehicle	3	70	119	T/600/6021
QAUE3/049	Repairing and Refurbishing Commercial and Passenger Carrying Vehicles	3	65	112	A/600/6022
QAUE3/050	Fitting Ancillary Units to Commercial and Passenger Carrying Vehicles	3	47	105	J/600/6024
QAUE3/054	Modifying Commercial and Passenger Carrying Vehicles	3	47	105	J/600/5553
Plus: One diffe	rent assessment route from the following:				
QAUE3/047	Producing Commercial and Passenger Carrying Vehicle Body Sub-Assemblies	3	65	112	T/600/6018
QAUE3/048	Assembling Commercial and Passenger Carrying Vehicle Body Sub-Assemblies to Produce a Vehicle	3	70	119	T/600/6021
QAUE3/049	Repairing and Refurbishing Commercial and Passenger Carrying Vehicles	3	65	112	A/600/6022
QAUE3/050	Fitting Ancillary Units to Commercial and Passenger Carrying Vehicles	3	47	105	J/600/6024
QAUE3/051	Fitting Internal and External Trim and Fitments to Commercial and Passenger Carrying Vehicles	3	20	56	L/600/6025
QAUE3/052	Fitting Pipework Systems to Commercial and Passenger Carrying Vehicles	3	45	105	R/600/6026
QAUE3/053	Fitting Electrical and Electronic Components to Commercial and Passenger Carrying Vehicles	3	45	105	R/600/5524
QAUE3/054	Modifying Commercial and Passenger Carrying Vehicles	3	47	105	J/600/5553
QAUE3/055	Joining Components for Commercial and Passenger Carrying Vehicles using a Manual Welding Process	3	76	252	R/600/5569
QAUE3/056	Assembling Components for Commercial and Passenger Carrying Vehicles by Resistance Spot Welding	3	7	35	M/600/5577

Pathway QAUG: Motorsport Vehicle Technician (Mechanical)

Optional assessment routes: Both of the following assessment routes must be taken:

QAUE3/058	Setting up Motorsport Vehicles	3	60	105	D/600/5638
QAUE3/059	Carrying out Motorsport Vehicle Inspections during a Competition	3	50	105	F/600/5647
Plus: Three of	the following assessment routes must be take	en:			
QAUE3/060	Removing and Re-fitting Motorsport Engines and Ancillary Components	3	65	112	M/600/5658
QAUE3/061	Removing and Re-fitting Transmissions on Motorsport Vehicles	3	65	112	Y/600/5668
QAUE3/062	Removing and Re-fitting Suspension Systems on Motorsport Vehicles	3	65	112	M/600/5675
QAUE3/063	Removing and Re-fitting Braking Systems on Motorsport Vehicles	3	60	105	A/600/5680
QAUE3/064	Removing and Re-fitting Steering Systems on Motorsport Vehicles	3	60	105	J/600/5682
QAUE3/065	Removing and Re-fitting Chassis Sub- Assemblies and Components on Motorsport Vehicles	3	60	105	J/600/5830
QAUE3/066	Removing and Re-fitting Fuel Systems on Motorsport Vehicles	3	60	105	L/600/5831
QAUE3/067	Carrying out Fault Diagnosis and Rectification Activities on Motorsport Vehicles During a Competition	3	58	105	Y/600/5833
Plus: One of th	e following assessment routes must be taken	:			
QAUE3/068	Removing, Fitting and Trimming Bodywork to Motorsport Vehicles	3	25	63	H/600/5835
QAUE3/069	Removing and Re-fitting Electrical/Electronic Equipment on Motorsport Vehicles	3	65	112	M/600/5837
QAUE3/070	Restoring Motorsport Mechanical Components to Usable Condition by Repair	3	47	105	A/600/5839
QAUE3/074	Welding Motorsport Vehicle Components using a Manual Welding Process	3	76	252	R/600/5846
QAUE3/078	Inspecting Motorsport Components by Penetrant Flaw Detection Techniques	3	52	105	M/600/5854

Optional assessment routes: One of the following assessment routes must be taken:

QAUE3/080	Motorsport Composite Mouldings using Pre-Pred Laminating Techniques	3	86	210	J/600/6072	
QAUE3/081	Producing Motorsport Composite Mouldings using Wet Lay-up Techniques	3	86	210	L/600/6073	
QAUE3/082	Producing Motorsport Composite Mouldings using Resin Infusion Laminating Techniques	3	86	210	D/600/6076	
QAUE3/083	Producing Motorsport Composite Assemblies	3	86	210	K/600/6078	
Plus: Two of the	following assessment routes must be taken:					
QAUE3/080	Motorsport Composite Mouldings using Pre-Preg Laminating Techniques	3	86	210	J/600/6072	
QAUE3/081	Producing Motorsport Composite Mouldings using Wet Lay-up Techniques	3	86	210	L/600/6073	
QAUE3/082	Producing Motorsport Composite Mouldings using Resin Infusion Laminating Techniques	3	86	210	D/600/6076	
QAUE3/083	Producing Motorsport Composite Assemblies	3	86	210	K/600/6078	
QAUE3/084	Bonding Motorsport Composite Mouldings	3	30	52	M/600/6079	
QAUE3/085	Repairing Motorsport Composite Mouldings	3	77	161	H/600/6080	
QAUE3/086	Applying Finishes to Motorsport Composite Mouldings	3	46	105	A/600/6084	
QAUE3/087	Trimming Motorsport Composite Mouldings using hand Tools	3	46	105	F/600/6085	
QAUE3/088	Identifying Defects in Motorsport Composite Mouldings	3	30	52	L/600/6087	

Note: Two different assessment routes must be taken.

Pathway QAUI: Prototype Powertrain Development

Optional assessment routes: One of the following assessment routes must be taken:

QAUE3/015	Diagnosing and Rectifying Faults in Vehicle Electrical and Electronic	3	58	105	R/600/5832	
	Systems					
QAUE3/044	Carrying Out Fault Diagnosis on Experimental Vehicles	3	53	105	J/600/6010	
Plus: Three of th	e following assessment routes must be taken:					
QAUE3/035	Assembling and Disassembling Mechanical Equipment on Experimental Vehicles	3	70	126	J/600/5942	
QAUE3/036	and Disassembling Electrical and Electronic Equipment on Experimental Vehicles	3	70	126	R/600/5958	
QAUE3/136	Removal and Fitting Fuel Systems to Prototype Engines for Test	3	65	119	A/601/0393	
QAUE3/137	Installing Electrical/Electronic Engine/Transmission Control Units to Prototype Vehicles	3	70	126	L/601/0396	
QAUE3/138	Setting Up and Testing Prototype Vehicle Electrical/Electronic Engine/Transmission Control Units	3	60	105	R/601/0397	
QAUE3/139	Setting Up and Testing Prototype Vehicle Data Acquisition Systems	3	60	105	J/601/0400	
QAUE3/140	Stripping and Rebuilding Prototype Engines for Test	3	75	140	R/601/0402	
QAUE3/141	Building Prototype Engines for Test	3	70	133	Y/601/0403	
QAUE3/142	Testing Prototype Engines (Fixed Dynamometer)	3	60	105	D/601/0404	
QAUE3/143	Testing Prototype Engines Installed in Vehicles	3	60	105	H/601/0405	
QAUE3/144	Dressing Prototype Engines for Test	3	65	105	K/601/0406	

Pathway QAUJ: Vehicle Painting and Finishing

Optional assessment routes: Two assessment routes must be taken:

QAUE3/011	Preparing Vehicle Body Surfaces for Finishing	3	60	119	T/504/2832	
QAUE3/012	Spraying Vehicle Body Surfaces	3	80	133	A/504/2833	
QAUE3/145	Flattening and Polishing Vehicle Bodies	3	60	119	H/505/9528	

Pathway QAUK: Vehicle Trimming

Optional assessment routes:

Either: Three of the following assessment routes must be taken:

QAUE3/016	Trimming of Body Components for	3	35	70	F/504/2834	
QAUE3/017	Machining and Hand Sewing of Vehicle Trim Components	3	45	98	L/504/2836	
QAUE3/018	Assembling Trim Components to Vehicles	3	30	70	R/504/2837	
QAUE3/019	Making Vehicle Trim Prototypes and Patterns	3	50	119	Y/504/2838	
Or: All of the foll	owing PMO 2 assessment routes:					
QPM02/003	Transferring materials	3	13	53	Y/601/3009	
QPM02/004	Preparing for manufacturing operations	3	9	42	L/601/3010	
QPM02/005	Concluding manufacturing operations	3	9	42	Y/601/3012	
Plus: The follow	ing assessment routes:					
QAUE3/019	Making Vehicle Trim Prototypes and Patterns	3	50	119	Y/504/2838	
Plus: One of the	following assessment routes:					
QAUE3/016	Trimming of Body Components for Vehicles	3	35	70	F/504/2834	
QAUE3/017	Machining and Hand Sewing of Vehicle Trim Components	3	45	98	L/504/2836	

QAUE3/018	Assembling Trim Components to Vehicles	3	30	70	R/504/2837	

Pathway QAUL: Vehicle Woodworking/Veneering

Optional assessment routes: All three of the following assessment routes must be taken:

QAUE3/020	Producing and Assembling Substrates	3	48	105	D/504/2839
	for vehicle components				
QAUE3/021	Veneering and Finishing Vehicle	3	46	98	R/504/2840
	Components				
QAUE3/022	Lacquering and Polishing Veneered	3	46	98	Y/504/2841
	Vehicle Components				

Pathway QAUM: Quality Inspection

Optional assessment routes: Both of the following assessment routes must be taken:

QAUE3/146	Inspecting Manufactured Vehicles	3	142	287	D/505/9527	
QAUE3/147	Implementing Quality Control Systems and Procedures in an Engineering Environment	3	40	106	H/600/5785	

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