apprenticeship
FRAMEWORK

Engineering Manufacture (Craft and Technician)

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Apprenticeships

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SEMTA

The Apprenticeship sector for occupations in science, engineering and manufacturing technologies.

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Short description

The Engineering Manufacture framework at level 3 is designed to provide the skills, knowledge and competence requirements to operate at craft or technician level as appropriate within the following engineering sub-sectors: Automotive, Aerospace, Electronics, Mechanical, Marine, Electrical, Metal goods and Other Transport Equipment.

Contact information

Proposer of this framework

Semta

Developer of this framework

Name:	Ian Carnell
Organisation:	Semta
Organisation type:	Sector Skills Council
Job title:	Manager - Frameworks
Phone:	01923 652350
Email:	icarnell@semta.org.uk
Postal address:	14 Upton Road Watford Herts WD18 0JT
Website:	www.semta.org.uk

Issuing Authority's contact details

Issued by:	SEMTA
Issuer contact name:	David George
Issuer phone:	01923 238441
Issuer email:	IssuingAuthority@semta.org.uk

Revising a framework

Contact details

Who is making this revision:	Ian Carnell
Your organisation:	Semta
Your email address:	icarnell@semta.org.uk

Why this framework is being revised

Following feedback from the NAS and before the SfA releasing the framework for funding, a number of minor amendments have been made which are detailed in the box below. This was also a good opportunity to add some additional techncial certificate qualifications that have been requested.

Summary of changes made to this framework

Summary of changes:

- Framework titling revised
- 2 Job roles clarified
- Variation in tech cert sizes explained
- Level 3 entry conditions amended
- APL arrangements from level 2 frameworks clarified
- additional required tech certs added

Qualifications removed

None

Qualifications added

Pathway 1

- Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF) 500/7315/1

- City & Guilds Level 3 Diploma in Aeronautical Engineering Survival Equipment Maintenance (QCF) 600/2320/X
- Edexcel BTEC Level 3 Extended Diploma in Aircraft Maintenance (QCF) 500/8099/4

Pathway 4

- City & Guilds Level 3 Diploma in Engineering - Marine (QCF) 600/2483/5

Pathway 5

- Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF) 500/7315/1
- Edexcel BTEC Level 3 Diploma in Electrical/Electronic Engineering (QCF) 500/8098/2
- Edexcel BTEC Level 3 Diploma in Engineering (QCF) 500/8154/8
- EAL Level 3 Certificate in Engineering Maintenance on Military Vehicles and Equipment (QCF) 600/2119/6
- City & Guilds Level 3 Diploma in Engineering (QCF) 600/0882/9

Pathway 6

- Edexcel BTEC Level 3 Diploma in Manufacturing Engineering(QCF) 500/7319/9
- Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF) 500/7315/1

Pathway 7

- Edexcel BTEC Level 3 Diploma in Manufacturing Engineering (QCF) 500/7319/9
- City & Guilds Level 3 Diploma in Engineering (QCF) 600/0882/9

Pathway 8

- Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF) 500/7315/1
- Edexcel BTEC Level 3 Diploma in Mechanical Engineering (QCF) 500/7283/3
- Edexcel BTEC Level 3 Diploma in Electrical/Electronic Engineering (QCF) 500/8098/2

Pathway 9

- City & Guilds Level 3 Diploma in Engineering (QCF) 600/0882/9

Pathway 10

- Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF) 500/7315/1

Pathway 11

- Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF) 500/7315/1
- City & Guilds Level 3 Diploma in Engineering (QCF) 600/0882/9

Pathway 12

- IMIAL Level 3 Diploma In Motorsport Vehicle Maintenance and Repair (QCF) 600/2579/7

Qualifications that have been extended

None

Purpose of this framework

Summary of the purpose of the framework

Semta's engineering sector profile in England is composed of eight core engineering manufacturing sectors.

The "leading-edge" sectors include:

- Aerospace
- Automotive
- Electronics
- Marine (ship, boat and yacht building, mainenance and repair)

The "mature engineering" sectors include:

- Electrical
- Metal goods
- Mechanical
- Other Transport Equipment

The combined sub-sectors employ 1.07 million people across nearly 57,000 establishments. The leading-edge technology sectors employ 378,000 people in 12,300 establishments while the mature engineering sectors employ 692,000 people in 44,600 establishments.

Focusing on technical roles only, it is estimated that 634,000 engineers, scientists and technologists work across the engineering sectors in England. The mature engineering sectors employs around 415,000 people in technical roles and the leading-edge technology sectors employs around 219,000 people in technical roles.

Employment in Semta’s sectors is concentrated in the South East, the West Midlands and the North West, but there is variation across the industry groups. Mature engineering employment is greatest in the West Midlands, the North West and Yorkshire and the Humber. The leading-edge industries employment distribution is greatest in the South East , the North West and the West Midlands.

The impact of this mix of sector employment in each region is likely to be reflected in future growth rates and employment trends across each region.

Micro-sized establishments (1-10 employees) account for 81% of total establishments within the engineering sectors in England. Only 1% of establishments employ greater than 250 people.

Demographics of the technical workforce:

Working status:

91% of Semta's workforce is a company employee compared to 86% for all sectors in England. Only 9% of Semta's workforce is self-employed compared to 14% for all sectors in England.

97% of Semta's technical workforce is employed on a full-time basis compared to 73% for all sectors in England.

Gender:

Only 8% of Semta's technical workforce is female compared to 48% for all sectors in England.

Age:

Only 8% of Semta's technical workforce is aged 16-24 compared to 14% for all sectors in England. 13% of Semta's technical workforce is aged 60 plus compared to 12% for all sectors in England.

Disability:

14% of Semta's technical workforce in England has some sort of disability, the same figure as for all sectors in England.

Ethnicity:

Only 5% of Semta's technical workforce in England is from an ethnic minority compared to 9% for all sectors in England.

Occupations:

The largest technical occupational categories in the workforce are craft (39%), operators (25%) and professionals (15%).

The main technical occupations within Semta's sectors include production, works and maintenance managers, metal working production and maintenance fitters, mechanical engineers, metal working machine operatives and welding trades.

Employment trends:

Semta's sectors in England have experienced a period of major restructuring during 1999 to 2008, with a net loss of 360,000 jobs (19%), compared with an increase in employment of 7% across all sectors in England.

By sub-sector, the largest reductions in employment occurred in the metals, mechanical equipment and electronics sectors.

In terms of company size, the largest percentage decreases in employment in Semta's sectors during 1999 to 2008 occurred in large (-31% decrease in employment) and medium sized sites (-15%). Overall, small sites with 11-49 employees were least likely to have shown an overall decrease in employment (-3%) over this period.
By region, the largest reductions in employment in Semta's sectors occurred in the West Midlands, South East and North West.

Seven out of the ten local authority districts experiencing the most significant job losses within Semta's sectors in England during 1999 to 2008 were located in the West Midlands.

Employment growth at a local level in Semta's sectors has predominantly been in localities where there has been a focus on leading-edge technology and science industry sectors.

Recent employer experience:

In 2009 the recession had a major impact on employment in England. In relation to Semta's sectors overall there was a net balance of 26% of employers expecting a decrease in employment, compared to a net balance of 16% of employers across the whole economy expecting a decrease.

A net decrease in employment was most likely for Semta's large employers (40% of establishments) and medium-sized (-39%) sites.

Semta's employers in the South West, West Midlands and Yorkshire and the Humber were most likely to expect a net decrease in employment (all 29% of establishments).

Employment projections:

Focusing on technical roles, there is expected to be a net requirement across the engineering sectors in England for 72,000 engineers, scientists and technologists (10,300 per annum) during 2010-2016.

The proportion of jobs in medium- to low-level skilled jobs such as craft and operator occupations, are all projected to decrease in terms of employment share during 2010 to 2016. Set against these changes, higher level management, professional and technician occupations are likely to form a greater share of total employment in the engineering sectors.

The National Employers Skills Survey (NESS) 2009 has identified that the engineering sectors are suffering the greatest skill challenges in recruitment. They have a high proportion of hard-to-fill vacancies, and a high number of skills shortages. This along with the ageing work force highlights the need for an apprenticeship to both up-skill the existing workforce and encourage new entrants in to the sector.

Recruitment of young people:

Of those engineering employers in England that recruited, 23% recruited someone aged under 24 years old direct from school, college or university in the last 12 months, the same figure as that for all sectors in England. Employers in the leading-edge technology sectors (26% of those that recruited) were most likely to have recruited someone aged under 24 years compared to 20% of employers in the mature engineering sectors.

Approximately 40% of engineering employers that recruited had taken on 16 year olds from school.

Employers in Semta's sectors seem to view young people of all ages as less well prepared for work than do employers in other sectors. Even so, most of Semta's employers who recruited young people felt they were very well or well prepared for work.

Where employers considered young people to be poorly prepared for work or have skills lacking, the main reasons were that they lacked life experience or maturity, they had poor attitude or motivation and/or they lacked the required skills or competencies.

Vacancies:

Despite the recession, employers in Semta's sectors have still shown a substantial demand for new recruits. In 2009, 8% of engineering establishments in England had vacancies, approximately 11,500 vacancies in total. It is estimated that in there were vacancies for 2,700 operators, 2,700 craftspersons and 1,000 technicians.

In total, 7,300 vacancies (63%) were in the large employers (250+ employees). However, a substantial number of vacancies are found across all the sizes of employer, with approximately 1,400 vacancies in total in each of micro, small and medium-sized employer groups.

Overall, 2.4% of engineering employers in England had hard-to-fill vacancies with a total of 2,350 hard-to-fill vacancies reported. Just over half of all hard-to-fill vacancies were in

operator (290 vacancies), crafts-persons (690) and technician (280) occupations.

Skill shortages were the main reason for these hard-to-fill vacancies. Skills shortages in applicants are particularly acute for technician and craft occupations.

Drivers of skills change:

Semta's sectors in England felt that the main drivers of future skills requirements would be new legislative or regulatory requirements (48%), introduction of new technologies or equipment (46% of establishments), development of new products and services (42%), introduction of new working practices (41%) and increased competitive pressure (34%). Large and medium-sized employers were most likely to expect a change in their skills needs from the key drivers identified.

The occupations most likely to be affected by the need to acquire new skills or knowledge were craftspersons, managers, operators and technicians.

Current skills and qualifications:

The qualifications profile of the workforce can be used as an indicator of its level of skills. The changing qualifications profile of the engineering workforce is evidence of the increasing demand for higher-level skills.

Between 2000 to 2009 the overall proportion of Semta's workforce in England with NVQ Level 4 plus qualifications increased from 29% to 36% (net increase of +7%), while the proportion of employees with no qualifications reduced from 12% to 6%.

Overall, 6% of Semta's workforce in England has no qualifications compared to 8% for all sectors in England. Employees with intermediate (NVQ Level 3) and higher-level skills (NVQ Level 4 plus) accounted for 65% of Semta's workforce compared to 57% of the workforce in all sectors in England.

Skill needs and gaps:

26% of engineering establishments reported skills gaps compared to 19% of establishments in all sectors in England. The incidence of skills gaps increases by size of establishment, ranging from 16% of micro-sized establishments to 67% of large establishments.

It is estimated that 12% of the engineering workforce in England, approximately 128,000 people, had skills gaps. This compares to 7% of the workforce in all sectors of the economy in England. The main reasons for skills gaps in Semta's sectors were a lack of experience/being recently recruited (76% of establishments with skills gaps).

The main skills cited as lacking in employees were technical, practical or job specific skills (73% of establishments reporting skills gaps). Employers were skills gaps were most likely to have technical skills gaps issues with craft (76%), operator (75%) and technician (69%) occupations.

The other main skills gaps highlighted were problem solving (45%), team working (37%), oral communications (36%) and management skills (35%).

The main impact of skills gaps were increased workload for other staff, increased operating costs, difficulties meeting quality standards and difficulties introducing new working practices. The main action taken by employers in Semta's sectors to overcome skills gaps was to increase training activity/spend or increase/expand trainee programmes.
Future skills demand:
For the engineering sectors in England there is expected to be a net requirement for over 37,000 people in technical roles with intermediate and higher level qualification (NVQ Level 3 plus or equivalent) over the period 2010 to 2016.

Additionally, there is expected to be a net requirement for about 6,100 people into technical roles that do not have qualifications. This would maintain the current situation where people with no qualifications are working at all levels within the industry. It is important that these new entrants are up skilled to meet the needs of the jobs they are going to fulfill if the engineering sectors in England are going to increase their competitiveness.

Craft/technician occupations:

Employment
• 253,000 crafts-person and 37,000 technicians are employed in technical roles in the engineering sectors in England.

Key occupations
• The main sub-occupations within the craft category include metal working, production and maintenance fitters, welding trades, electricians and electrical fitters, metal machining setters & setter-operators and electrical and electronic engineers.

• The main sub-occupations within the technician category include engineering technicians, draught-persons, laboratory technicians and electrical and electronics technicians.

Demographic profile for engineering craft-persons:

98% are in full time employment
1% Female
10% between 16 to 24 yrs of age
15% age 60yrs +
14% have a disability
3% ethnicity non-white

craft-persons as a proportion of total employment 39%

Demographic profile for engineering technicians:

95% are in full time employment
6% Female
10% between 16 to 24 yrs of age
16% age 60yrs +
14% have a disability
5% ethnicity non-white
technicians as a proportion of total employment 39%

Current skills and qualifications:

• 64% of craftspersons and 73% of technicians were qualified to NVQ Level 3 or higher.

Vacancies

• It is estimated that in there were 2,700 crafts-person vacancies and 1,000 technician vacancies across the engineering sector in England in 2009.
• 690 craft vacancies were hard-to-fill and 280 technician vacancies were hard-to-fill.

Skills needs and gaps

• 13% of engineering establishments had skills gaps for craftspersons and 2% had skills gaps for technicians.
• 13% of craftspersons and 16% of technicians within engineering establishments in England had skills gaps.

Future skills demand

• 22,200 craftspersons (3,200 per annum) and 6,800 technicians (970 per annum) are required into the engineering sectors in England over the period 2010-2016.
• 10,300 craftspersons and 4,700 technicians will need qualifications at NVQ Level 3 or higher.

The Engineering Manufacture Advanced Apprenticeship at Level 3

The Engineering Manufacture Advanced Apprenticeship at Level 3 covers a broad range of engineering sub-sectors such as Auto motive, Aerospace, Electronics and Marine (leading edge sectors) and Mechanical, Electrical, Metal Goods and Other Transport Equipment (mature

sectors). Its designed to provide the skills, knowledge and competence requirements through specific sub-sector pathways to operate at craft or technician level within these areas.

The engineering sector has a long tradition of offering apprenticeship frameworks as a means of meeting the skills requirements for its sector. The framework has kept pace with technological change within each of the sub-sectors and remains highly relevant to their skills training needs. Alongside the technology pathways are the traditional craft skills generally associated with the 'mature' sub-sectors such as welding and fabrication and engineering maintenance.

The framework has been designed to address the skills gaps and shortages identified above, and address the issue of an ageing workforce, by attracting young people into the engineering industry and providing them with the skills, knowledge and experience which employers are seeking. In addition the Advanced Apprenticeship provides a progression route that the existing workforce can use to up-skill themselves to meet the technical, economic and environmental changes.

There are a very significant range of job titles, roles and occupations within the scope of this framework at level 3 but essentially they can be grouped into craft and technician activities within the various sub-sectors. Craft roles generally being more common within the mature sub-sectors and technician roles pertaining to the leading edge sub-sectors.

Aims and objectives of this framework (England)

Specifically, the framework will provide apprentices with the skills, underpinning knowledge and transferable skills required to operate in each of the engineering sub-sectors, carrying out a wide variety of defined craft and technician roles through the pathways described.

Further aims and objectives:

- Develop more technicians through advanced apprenticeships (Skills for Growth Strategy England)
- Incorporate the latest developments in Engineering National Occupational Standards (NOS) at level 3
- Provide greater unit flexibility through the QCF
- Provide a range of pathways that meet engineering employers needs
- Help improve recruitment and retention rates within the industry by offering appropriate career progression
- Improve productivity rates and profitability (increased GVA per person)
- To better address equality and diversity within the sector as defined above in the framework summary above
- To increase participation rates in the framework at Advanced Apprenticeship level.
- To tackle the age profile within engineering (14% workforce is over the age of 60)

- To help produce the carbon footprint by maximising efficiency and eliminating waste
- Increase the level of general literacy and numeracy through transferable skills
- Provide a career pathway into high level jobs and training
- Developing apprentices employability and skills making them more attractive to all employers whichever career they choose.

Entry conditions for this framework

Employers wish to attract applicants who have an interest to work in an engineering environment as craft-persons or technicians

As a guide, the Engineering Manufacture Advanced Apprenticeship is suitable for applicants who have five GCSEs grade C or above including including Maths, English, and a Science. This is not a hard and fast rule but may vary according to the pathway chosen (craft or technician) and the suitability of individual applicants.

Engineering employers welcome applicants from a diverse range of backgrounds and anticipate that they will have a wide range of experience, achievements and qualifications.

Employers would be interested in applicants that:

- Have completed the Improving Operational Performance Intermediate level apprenticeship framework
- Have completed the Engineering Manufacture Intermediate level apprenticeship framework
- Are keen and motivated to work in an engineering environment
- Are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- Have previous work experience or employment in the sector
- Have completed a 14 to 19 Diploma in Engineering or Manufacturing
- Have a Welsh Baccalaureate (Welsh applicants)
- Have completed a Young Apprenticeship in Engineering or other related area
- Have GCSEs in English, Maths, and Science (C) grade or above

The selection process on behalf of employers may include initial assessment activity such tests in basic numeracy, literacy, communication skills and spatial awareness. There may also be an interview to ensure potential apprentices have selected the right occupational sector to meet their needs and expectations and those of their employer.

Rules to avoid the need to repeat qualifications:

Processes exist to make sure that applicants with prior knowledge, qualifications and or experience are not disadvantaged by having to repeat learning. Training providers, Colleges and Awarding Organisations will be able to advise applicants on the current rules for accrediting prior learning and recognising prior experience.

Transferable skills:

Please refer to the transferable skills section of this framework to identify the proxies and relaxation rules applicable to functional/key skills.

Knowledge qualifications:

If applicants already have one of the knowledge qualifcations or individual QCF units at Level 3 (see knowledge qualifications page) before starting their apprenticeship, they may count this and will not have to repeat the qualification providing they have achieved this qualification within five years of starting their apprenticeship. Further more the hours that were spent gaining the qualification may be counted towards the total hours for the apprenticeship.

Competence qualifications:

If applicants already have one of the competence qualifications at Level 3 (see competence qualifications page) before starting their apprenticeship, they may count this and will not have to repeat the qualification providing they have achieved this qualification within five years of starting their apprenticeship. Or individual QCF units at Level 2, such as PEO or Level 3 QCF units as applicable to the outcome qualification. It is important however that there is agreement between the employer and the apprentice that the applicant is currently competent. As is the case with the knowledge element above the hours that were spent gaining the competence qualification may be counted towards the total hours for the apprenticeship.

Prior experience in the sector:

- Applicants who have completed the Improving Operational Performance Level 2 framework (Performing Engineering Operations Level 2 pathway) will be able to accredit this qualification against the requirements of the Extended Level 3 Diploma

- Applicants that are already working in the sector or have recently worked, should be able to have their experience recognised by Awarding Organisations against the elements above.

Level 3

Title for this framework at level 3

Advanced Apprenticeship in Engineering Manufacture (Craft and Technician)

Pathways for this framework at level 3

Pathway 1:	Aerospace
Pathway 2:	Marine (Ship building, maintenance and repair)
Pathway 3:	Mechanical Manufacturing Engineering
Pathway 4:	Marine (Yacht and Boat building, maintenance and repair)
Pathway 5:	Engineering Maintenance
Pathway 6:	Fabrication and Welding
Pathway 7:	Materials Processing and Finishing
Pathway 8:	Engineering Technical Support
Pathway 9:	Electrical and Electronic Engineering
Pathway 10:	Installation and Commissioning
Pathway 11:	Engineering Tool-making
Pathway 12:	Automotive
Pathway 13:	Engineering Woodworking, Pattern and Modelmaking
Pathway 14:	Engineering Leadership

Level 3, Pathway 1: Aerospace

Description of this pathway

Aerospace (skilled craft-person and technician) total minimum credit value = 240 credits

Entry requirements for this pathway in addition to the framework entry requirements

There are no additional requirements to the general framework entry requirments

Job title(s)	Job role(s)
Aircraft Systems fitter (manufacture)	Installation and functional testing of aircraft systems: electrical; electronic; avionic; optical; pneumatic or hydraulic
Aero Engine fitter (manufacture)	Assembly of engine modules: compressors; combustors; turbines; fuel systems; control systems; or final assembly of engine
Aero Engine fitter/tester	Production or development testing of aero engines to agreed performance and safety specifications
Aircraft systems development technician	Development and testing of new aircraft systems: mechanical; electrical; avionic; electronic; optical; pneumatic or hydraulic
Aircraft maintenance fitter	Maintenance and inspection of aircraft systems: mechanical; electrical; avionic; electronic; optical; pneumatic; hydraulic; engines; weapons or survival equipment to military and CAA quality standards
Composite technician	Perform repairs to aircraft composite components using the following materials: fibreglass; carbon fibre; aramid (nomex and kevlar) using wet lay-up; prepreg lay-up; metal-to-metal bonding utilising vacuum bagging and hot bonding techniques
Airframe fitter (manufacture)	Assembly of wings/ fuselage or major sub-assemblies, including installation of mechanical; electrical; avionic; electronic; pneumatic; hydraulic; optical; weapons and survival equipment.

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Aeronautical Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/2083/0	EAL	165	441	
C1b	600/2103/2	City & Guilds	165	441	
C1c	600/1864/1	Edexcel	165	441	

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Aircraft Maintenance Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	501/1113/9	EAL	78	600	

K2 - EAL Level 3 Diploma in Engineeering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/1130/9	EAL	78	600	

Knowledge qualifications available to this pathway(cont.)

K3 - EAL Level 3 Diploma in Aircraft Maintenance Engineering Technology (Progressive) (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	501/1443/8	EAL	97	750	

K4 - EAL Level 3 Diploma in Engineering and Technology (Progressive) (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	501/1419/0	EAL	97	750	

K5 - Edexcel BTEC Level 3 Subsidiary Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/7841/0	Edexcel	60	360	

K6 - City & Guilds Level 3 Diploma for On-Aircraft Maintenance - Category A (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	600/1927/X	City & Guilds	72	595	

K7 - City & Guilds Level 3 Diploma In Aircraft Maintenance (Civil Aircraft Electrical and Avionics) (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	600/1970/0	City & Guilds	73	585	

Knowledge qualifications available to this pathway(cont.)

K8 - City & Guilds Level 3 Diploma In Aircraft Maintenance (Civil Aircraft Mechanical) (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	600/1929/3	City & Guilds	80	655	

K9 - City & Guilds Level 3 Diploma In Aircraft Maintenance (Military Aircraft Mechanical) (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	600/1972/4	City & Guilds	79	645	

K10 - City & Guilds Level 3 Diploma In Aircraft Maintenance (Military Aircraft Weapons Maintenance) (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	600/1973/6	City & Guilds	80	720	

K11 - City & Guilds Level 3 Diploma in Aircraft Manufacture (Electrical and Avionics Manufacture) (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	600/1932/3	City & Guilds	60	475	

K12 - City & Guilds Level 3 Diploma in Aircraft Manufacture (Mechanical Manufacture) (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	600/1925/6	City & Guilds	62	490	

Knowledge qualifications available to this pathway(cont.)

K13 - Edexcel BTEC Level 3 Diploma in Aeronautical Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	500/7799/5	Edexcel	120	720	

K14 - City & Guilds Level 3 Diploma In Aircraft Maintenance (Military Aircraft Electricals and Avionics) (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K14a	600/1971/2	City & Guilds	72	575	

K15 - Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K15a	500/7315/1	Edexcel	120	720	

K16 - City & Guilds Level 3 Diploma in Aeronautical Engineering Survival Equipment Maintenance (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K16a	600/2320/X	City & Guilds	66	570	

K17 - Edexcel BTEC Level 3 Extended Diploma in Aircraft Maintenance (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K17a	500/8099/4	Edexcel	180	1080	

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K17a provides underpinning knowledge for C1a, C1b & C1c

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications deliver essential underpinning knowledge which supports the fundamental scientific and mathematical principles to equip apprentices with the understanding required to operate effectively and efficiently at craft and technician level within this sub-sector.

Advanced Apprentices must complete one of the Level 3 NVQ Extended Diploma's. However if the relevant QCF PEO units have already been achieved and certificated in a previous programme such as applicants who have completed the Improving Operational Performance Level 2 framework (Performing Engineering Operations Level 2 pathway) then they will be able to accredit these against the requirements of the Extended Level 3 Diploma. In such circumstances this would result in the minimum GLH requirements for the relevant pathway being reduced by a minimum of 123 hours and a minimum value of 27 credits (depending on the PEO units completed).

Delivery methods for knowledge based qualifications may vary, from a conventional college based environment, to delivery through a combination of this and written/web-based/distance learning materials.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	A	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	2	5
GCSE qualification in ICT (with enhanced functional content)	C	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	A	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

ICT is included in the required Functional Skills

Progression routes into and from this pathway

Progression routes into the pathway, including those who:

- Have GCSEs in English, Maths, and Science (C) grade or above
- Have A or AS levels in Science, Technology, Engineering or Mathematics subjects
- Are keen and motivated to work in an aerospace engineering environment
- Have completed an Intermediate level apprenticeship in Engineering
- Have completed an Intermediate level apprenticeship in Improving Operational Performance
- Are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- Have previous work experience or employment in the Engineering sector
- Have completed a 14 to 19 Diploma in Engineering or Manufacturing
- Have completed a Young Apprenticeship in Engineering or other related area

Those who complete an Advanced Engineering Manufacture - Aerospace Apprenticeship:

While significant numbers of Advanced Apprentices will seek internal progression to team leader or supervisory roles within their companies, some will want to progress to a Higher Apprenticeship in Engineering; others may decide to opt for a Foundation degree or HNC/HND. More generally, most ex-apprentices aspire to a combination of internal promotion while at the same time undertaking company sponsored qualifications as specified above.

For more information on engineering progression routes we recommend you visit the websites hot-linked below.

http://www.semta.org.uk/careers__qualifications/plan_your_career/progression_routes.aspx

http://www.semta.org.uk/pdf/Routeimage4Jan2010.pdf

UCAS points for this pathway:

(no information)

Delivery and assessment of employee rights and responsibilities

The nine national outcomes for Employee Rights and Responsibilities (ERR) are as follows:

1. The range of employer and employee statutory rights and responsibilities under employment law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and health and safety, together with the duties of employers.

2. Procedures and documentation which recognises and protects their relationship with their employer, including health and safety and equality and diversity training as part of the apprenticeship.

3. The range of sources and information and advice available to them on their employment rights and responsibilities, including Access to Work and Additional Learning Support.

4. The role played by their occupation in their organisation and industry.

5. Has an informed view of the types of career pathways that are open to them.

6. The types of representative bodies and understands their relevance to their industry and organisation and the main roles and responsibilities.

7. Where and how to get information and advice on their industry, occupation, training and career.

8. Can describe and work within their organisation's principles and codes of practice.

9. Can recognise and form a view on issues of public concern that affect their organisation and industry.

There are two methods of achieving ERR as set out below:

Method 1

Emta Awards Limited (EAL) have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

The qualification is detailed below:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

QCF qualification ref no: 600/0290/6
Credit value: 5 credits
Guided learning hours: 41

This qualification will enable apprentices to both know and understand the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being. Apprentices achieving the qualification will have demonstrated that they have the underpinning knowledge relevant for the engineering/manufacturing environment which satisfies the Specification for Apprenticeship Standards for England.

Method 2

Semta has produced an Apprentice ERR workbook that is available from:

customercare@eal.org.uk

The requirements for completing it must be explained to the apprentice right at the start of their training in order that they may take full advantage of their *company induction where significant amounts of information towards the national outcomes will be covered.

The workbook is intended to enable apprentices to know, understand and record the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being.

*Please note: All apprentices must receive a company induction programme

To claim final certification of the apprenticeship, one of the following forms of evidence will be required:

A qualification certificate for EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

or

A completed and countersigned Semta ERR workbook

Level 3, Pathway 2: Marine (Ship building, maintenance and repair)

Description of this pathway

Marine (ship building, maintenance and repair, skilled craft-person and technician) total minimum credit value = 211 credits

Entry requirements for this pathway in addition to the framework entry requirements

There are no additional requirements to the general framework requirements

Job title(s)	Job role(s)
Marine fabricator/welder	Fabrication and welding of thick plate for ship modules / sub-assemblies
Marine electrical fitter	Installation, maintenance and repair of electrical equipment and associated systems
Marine pipe-fitter	Fabricate, weld, and install pipe systems within marine applications
Marine engine fitter	Installation, maintenance and repair of large marine propulsion sytems
Marine mechanical fitter	Installation, maintenace and repair of marine mechanical equipment
Marine electronics technician	Installation, maintenance and repair of marine electronic equipment associated with power, propulsion, control, navigation and communications
Specialist welder (submarines)	Welding of specialist steels (Q1N) for submarine pressure hulls
Marine machinist	Operation of machine tools both CNC and manual to fabricate or repair marine equipment
Marine carpenter	Reads specifications to determine dimensions of wooden fittings in ships or boats. Shapes and laminates wood to form parts of ship, using steam chambers, clamps, glue, and jigs. Repairs structural woodwork and replaces defective parts and equipment, using hand tools and power tools

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Marine Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1764/8	EAL	142	424	
C1b	600/1869/0	Edexcel	142	424	

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	501/1130/9	EAL	78	600	

K2 - EAL Level 3 Diploma in Engineering and Technology (Progressive) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/1419/0	EAL	97	750	

K3 - City & Guilds Level 3 Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	600/0882/9	City & Guilds	54	480	

Knowledge qualifications available to this pathway(cont.)

K4 - Edexcel BTEC Level 3 Subsidiary Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/7841/0	Edexcel	60	360	

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K4a provides underpinning knowledge for C1a and C1b

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications deliver essential underpinning knowledge which supports the fundamental scientific and mathematical principles to equip apprentices with the understanding required to operate effectively and efficiently at craft and technician level within this sub-sector.

Advanced Apprentices must complete one of the Level 3 NVQ Extended Diploma's. However if the relevant QCF PEO units have already been achieved and certificated in a previous programme such as applicants who have completed the Improving Operational Performance Level 2 framework (Performing Engineering Operations Level 2 pathway) then they will be able to accredit these against the requirements of the Extended Level 3 Diploma. In such circumstances this would result in the minimum GLH requirements for the relevant pathway being reduced by a minimum of 123 hours and a minimum value of 27 credits (depending on the PEO units completed).

Delivery methods for knowledge based qualifications may vary, from a conventional college based environment, to delivery through a combination of this and written/web-based/distance learning materials.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	2	5
GCSE qualification in ICT (with enhanced functional content)	C	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	A	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

ICT is included in the required Functional skills

Progression routes into and from this pathway

Progression routes into the pathway, including those who:

- Have GCSEs in English, Maths, and Science (C) grade or above
- Have A or AS levels in Science, Technology, Engineering or Mathematics subjects
- Have completed an Intermediate level apprenticeship in Engineering
- Have completed an Intermediate level apprenticeship in Improving Operational Performance
- Are keen and motivated to work in a Marine engineering environment
- Are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- Have previous work experience or employment in the marine sector
- Have completed a 14 to 19 Diploma in Engineering or Manufacturing
- Have completed a Young Apprenticeship in Engineering or other related area

Progression from this pathway:

Those who complete an Advanced Engineering Manufacture - Marine (Ship building, maintenance and repair) Apprenticeship

While significant numbers of Advanced Apprentices will seek internal progression to team leader or supervisory roles within their companies, some will want to progress to a Higher Apprenticeship in Engineering; others may decide to opt for a Foundation degree or HNC/HND. More generally, most ex-apprentices aspire to a combination of internal promotion while at the same time undertaking company sponsored qualifications as specified above.

For further information on engineering progression routes we refer you to:

http://www.semta.org.uk/careers__qualifications/plan_your_career/progression_routes.aspx

http://www.semta.org.uk/pdf/Routeimage4Jan2010.pdf

UCAS points for this pathway:

(no information)

Delivery and assessment of employee rights and responsibilities

The nine national outcomes for Employee Rights and Responsibilities (ERR) are as follows:

1. The range of employer and employee statutory rights and responsibilities under employment law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and health and safety, together with the duties of employers.

2. Procedures and documentation which recognises and protects their relationship with their employer, including health and safety and equality and diversity training as part of the apprenticeship.

3. The range of sources and information and advice available to them on their employment rights and responsibilities, including Access to Work and Additional Learning Support.

4. The role played by their occupation in their organisation and industry.

5. Has an informed view of the types of career pathways that are open to them.

6. The types of representative bodies and understands their relevance to their industry and organisation and the main roles and responsibilities.

7. Where and how to get information and advice on their industry, occupation, training and career.

8. Can describe and work within their organisation's principles and codes of practice.

9. Can recognise and form a view on issues of public concern that affect their organisation and industry.

There are two methods of achieving ERR as set out below:

Method 1

Emta Awards Limited (EAL) have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

The qualification is detailed below:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

QCF qualification ref no: 600/0290/6
Credit value: 5 credits
Guided learning hours: 41

This qualification will enable apprentices to both know and understand the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being. Apprentices achieving the qualification will have demonstrated that they have the underpinning knowledge relevant for the engineering/manufacturing environment which satisfies the Specification for Apprenticeship Standards for England.

Method 2

Semta has produced an Apprentice ERR workbook that is available from:

customercare@eal.org.uk

The requirements for completing it must be explained to the apprentice right at the start of their training in order that they may take full advantage of their *company induction where significant amounts of information towards the national outcomes will be covered.

The workbook is intended to enable apprentices to know, understand and record the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being.

*Please note: All apprentices must receive a company induction programme

To claim final certification of the apprenticeship, one of the following forms of evidence will be required:

A qualification certificate for EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

or

A completed and countersigned Semta ERR workbook

Level 3, Pathway 3: Mechanical Manufacturing Engineering

Description of this pathway

Mechanical Manufacturing Engineering (craft-person and technician) total minimum credit value = 175 credits

Entry requirements for this pathway in addition to the framework entry requirements

There are no additional requirements to the general framework entry requirements

Job title(s)	Job role(s)
Skilled machinist	Machine components by applying a variety of removal and shaping techniques such as boring; cutting; drilling; milling; grinding and lapping.
Tool-maker	Work from engineering drawings to make precision tools, special guides and holding devices for use in manufacturing.
Metal forger	Forging methods include forging, drop forging, upset forging and the shaping of metal parts utilising heat and the force of power or hand hammers to produce required dimensions and contours
Skilled sheet metal worker	Fabricate, install, and repair ventilating, heating, and air-conditioning systems; stainless-steel kitchen and beverage equipment; and a wide variety of other products made of sheet metal.
Skilled fitter	Assembly of mechanical equipment and related systems to required specifications
Composite technican	Produce composite mouldings using the following techniques: Wet Lay Up; Pre Peg Lamination; Acrylic Moulding; Vacuum Forming; Bonding; Assembly using hand and machine tool techniques
Pipe fitter and assembler	Manufacture Pipes (small bore, ferrous, non ferrous) using machine and hand bending techniques, joining by fillet welding, bonding and brazing.

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Mechanical Manufacturing Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1701/6	EAL	106	439	
C1b	600/2096/9	City & Guilds	106	439	
C1c	600/1870/7	Edexcel	106	439	

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Mechanical Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	501/1155/3	EAL	78	600	

K2 - EAL Level 3 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/1130/9	EAL	78	600	

Knowledge qualifications available to this pathway(cont.)

K3 - EAL Level 3 Diploma in Mechanical Engineering Technology (Progressive) (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	501/1422/0	EAL	97	750	

K4 - City & Guilds Level 3 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	600/0882/9	City & Guilds	54	480	

K5 - Edexcel BTEC Level 3 Subsidiary Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/7841/0	Edexcel	60	360	

K6 - Edexcel BTEC Level 3 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	500/8154/8	Edexcel	120	720	

K7 - Edexcel BTEC Level 3 Diploma in Mechanical Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	500/7283/3	Edexcel	120	720	

Knowledge qualifications available to this pathway(cont.)

K8 - Edexcel BTEC Level 3 Diploma in Manufacturing Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	500/7319/9	Edexcel	120	720	

K9 - Edexcel BTEC Level 3 Diploma in Aeronautical Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	500/7799/5	Edexcel	120	720	

K10 - Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	500/7315/1	Edexcel	120	720	

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K10a provides underpinning knowledge for C1a, C1b & C1c

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications deliver essential underpinning knowledge which supports the fundamental scientific and mathematical principles to equip apprentices with the understanding required to operate effectively and efficiently at craft and technician level within this sub-sector.

Advanced Apprentices must complete one of the Level 3 NVQ Extended Diploma's. However if the relevant QCF PEO units have already been achieved and certificated in a previous programme such as applicants who have completed the Improving Operational Performance Level 2 framework (Performing Engineering Operations Level 2 pathway) then they will be able to accredit these against the requirements of the Extended Level 3 Diploma. In such circumstances this would result in the minimum GLH requirements for the relevant pathway being reduced by a minimum of 123 hours and a minimum value of 27 credits (depending on the PEO units completed).

Delivery methods for knowledge based qualifications may vary, from a conventional college based environment, to delivery through a combination of this and written/web-based/distance learning materials.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	2	5
GCSE qualification in ICT (with enhanced functional content)	C	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	A	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

ICT is included in the required Functional skills

Progression routes into and from this pathway

Progression routes into the pathway, including those who:

- Have GCSEs in English, Maths, and Science (C) grade or above
- Have A or AS levels in Science, Technology, Engineering or Mathematics subjects
- Have completed an Intermediate level apprenticeship in Engineering
- Have completed an Intermediate level apprenticeship in Improving Operational Performance
- Are keen and motivated to work in a Mechanical Manufacturing Engineering environment
- Are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- Have previous work experience or employment in the Mechanical Manufacturing sector
- Have completed a 14 to 19 Diploma in Engineering or Manufacturing
- Have completed a Young Apprenticeship in Engineering or other related area

Progression from this pathway:

Those who complete an Advanced Engineering Manufacture - Mechanical Manufacturing Engineering Apprenticeship:

While significant numbers of Advanced Apprentices will seek internal progression to team leader or supervisory roles within their companies, some will want to progress to a Higher Apprenticeship in Engineering; others may decide to opt for a Foundation degree or HNC/HND. More generally, most ex-apprentices aspire to a combination of internal promotion while at the same time undertaking company sponsored qualifications as specified above.

For further information on engineering progression routes we refer you to:

http://www.semta.org.uk/careers__qualifications/plan_your_career/progression_routes.aspx

http://www.semta.org.uk/pdf/Routeimage4Jan2010.pdf

UCAS points for this pathway:

(no information)

Delivery and assessment of employee rights and responsibilities

The nine national outcomes for Employee Rights and Responsibilities (ERR) are as follows:

1. The range of employer and employee statutory rights and responsibilities under employment law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and health and safety, together with the duties of employers.

2. Procedures and documentation which recognises and protects their relationship with their employer, including health and safety and equality and diversity training as part of the apprenticeship.

3. The range of sources and information and advice available to them on their employment rights and responsibilities, including Access to Work and Additional Learning Support.

4. The role played by their occupation in their organisation and industry.

5. Has an informed view of the types of career pathways that are open to them.

6. The types of representative bodies and understands their relevance to their industry and organisation and the main roles and responsibilities.

7. Where and how to get information and advice on their industry, occupation, training and career.

8. Can describe and work within their organisation's principles and codes of practice.

9. Can recognise and form a view on issues of public concern that affect their organisation and industry.

There are two methods of achieving ERR as set out below:

Method 1

Emta Awards Limited (EAL) have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

The qualification is detailed below:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

QCF qualification ref no: 600/0290/6
Credit value: 5 credits
Guided learning hours: 41

This qualification will enable apprentices to both know and understand the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being. Apprentices achieving the qualification will have demonstrated that they have the underpinning knowledge relevant for the engineering/manufacturing environment which satisfies the Specification for Apprenticeship Standards for England.

Method 2

Semta has produced an Apprentice ERR workbook that is available from:

customercare@eal.org.uk

The requirements for completing it must be explained to the apprentice right at the start of their training in order that they may take full advantage of their *company induction where significant amounts of information towards the national outcomes will be covered.

The workbook is intended to enable apprentices to know, understand and record the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being.

*Please note: All apprentices must receive a company induction programme

To claim final certification of the apprenticeship, one of the following forms of evidence will be required:

A qualification certificate for EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

or

A completed and countersigned Semta ERR workbook

Level 3, Pathway 4: Marine (Yacht and Boat building, maintenance and repair)

Description of this pathway

Marine (Yacht and Boat building, maintenance and repair, skilled craft-person and technician) total minimum credit value = 179 credits

Entry requirements for this pathway in addition to the framework entry requirements

It is highly recommended that candidates should have completed the 600/2304/1 City & Guilds Level 2 Certificate in Marine Construction, Systems Engineering and Maintenance (QCF) qualification prior to entering this pathway.

Job title(s)	Job role(s)
Marine engineer	Installation, maintenance and repair of fuel systems, propulsion systems, generators , welding and fabrication, machining, hydraulics, pipefitting and sea trials
Marine Electrician	Installation, maintenance and repair of instrumentation and panels, wiring looms, engines, generators, batteries and chargers.
Shipwright (Boat builder)	Uses GRP and composites, Gel-coats repairs, moulds, hull repairs, stern tubes/line ups. teak decks, bow thrusters, deck fitting
Marine painter	Specialists in spraying/applying specialist coatings and paint finishes to both new and repaired GRP and composite hulls and interior surfaces. The ability to work at heights and in confined circumstances is expected
Rigger/Boatmover	Mast stepping, Rigging, Splicing, working aloft, guard wires, wireless boat moving
Marine Fitting out carpenter	Install wood and fibreglass marine furniture, fittings, linings, units and other associated work (including laminating bulkheads) as part of total boat construction
Marine Fitting out Engineer	Installation of marine engines, cables, plumbing and all electrical wiring and connections
Marine Electronics Technician	Installation, maintenance and repair of marine electronic equipment associated with power, propulsion; control; navigation; entertainment and communications

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Diploma in Marine Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1054/X	EAL	115	301	
C1b	501/1526/1	Edexcel	115	301	

Knowledge qualifications available to this pathway

K1 - City & Guilds Level 3 Diploma in Marine Construction, Systems Engineering and Maintenance (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	600/2306/5	City & Guilds	49	450	

K2 - City & Guilds Level 3 Diploma in Engineering - Marine (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	600/2483/5	City & Guilds	94	863	

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a and K2a provide underpinning knowledge for C1a and C1b

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications deliver essential underpinning knowledge which supports the fundamental scientific and mathematical principles to equip apprentices with the understanding required to operate effectively and efficiently at craft and technician level within this sub-sector.

Delivery methods for knowledge based qualifications may vary, from a conventional college based environment, to delivery through a combination of this and written/web-based/distance learning materials.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	2	5
GCSE qualification in ICT (with enhanced functional content)	C	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	A	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

ICT is included in the required Functional skills

Progression routes into and from this pathway

Progression routes into the pathway, including those who:

- Have GCSEs in English, Maths, and Science (C) grade or above
- Have A or AS levels in Science, Technology, Engineering or Mathematics subjects
- Have completed an Intermediate level apprenticeship in Engineering
- Have completed an Intermediate level apprenticeship in Improving Operational Performance
- Are keen and motivated to work in a Marine (Boat and Yacht) Engineering environment
- Are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- Have previous work experience or employment in the Marine sector
- Have completed a 14 to 19 Diploma in Engineering or Manufacturing
- Have completed a Young Apprenticeship in Engineering or other related area

Progression from this pathway:

Those who complete an Advanced Engineering Manufacture - Marine (Yacht and Boat building, maintenance and repair) Apprenticeship:

While significant numbers of Advanced Apprentices will seek internal progression to team leader or supervisory roles within their companies, some will want to progress to a Higher Apprenticeship in Engineering; others may decide to opt for a Foundation degree or HNC/HND. More generally, most ex-apprentices aspire to a combination of internal promotion while at the same time undertaking company sponsored qualifications as specified above.

For further information on engineering progression routes we refer you to:

http://www.semta.org.uk/careers__qualifications/plan_your_career/progression_routes.aspx

http://www.semta.org.uk/pdf/Routeimage4Jan2010.pdf

UCAS points for this pathway:

(no information)

Delivery and assessment of employee rights and responsibilities

The nine national outcomes for Employee Rights and Responsibilities (ERR) are as follows:

1. The range of employer and employee statutory rights and responsibilities under employment law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and health and safety, together with the duties of employers.

2. Procedures and documentation which recognises and protects their relationship with their employer, including health and safety and equality and diversity training as part of the apprenticeship.

3. The range of sources and information and advice available to them on their employment rights and responsibilities, including Access to Work and Additional Learning Support.

4. The role played by their occupation in their organisation and industry.

5. Has an informed view of the types of career pathways that are open to them.

6. The types of representative bodies and understands their relevance to their industry and organisation and the main roles and responsibilities.

7. Where and how to get information and advice on their industry, occupation, training and career.

8. Can describe and work within their organisation's principles and codes of practice.

9. Can recognise and form a view on issues of public concern that affect their organisation and industry.

There are two methods of achieving ERR as set out below:

Method 1

Emta Awards Limited (EAL) have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

The qualification is detailed below:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

QCF qualification ref no: 600/0290/6
Credit value: 5 credits
Guided learning hours: 41

This qualification will enable apprentices to both know and understand the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being. Apprentices achieving the qualification will have demonstrated that they have the underpinning knowledge relevant for the engineering/manufacturing environment which satisfies the Specification for Apprenticeship Standards for England.

Method 2

Semta has produced an Apprentice ERR workbook that is available from:

customercare@eal.org.uk

The requirements for completing it must be explained to the apprentice right at the start of their training in order that they may take full advantage of their *company induction where significant amounts of information towards the national outcomes will be covered.

The workbook is intended to enable apprentices to know, understand and record the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being.

*Please note: All apprentices must receive a company induction programme

To claim final certification of the apprenticeship, one of the following forms of evidence will be required:

A qualification certificate for EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

or

A completed and countersigned Semta ERR workbook

Level 3, Pathway 5: Engineering Maintenance

Description of this pathway

Engineering Maintenance (Craft-person and Technician) total minimum credit value = 217 credits

Entry requirements for this pathway in addition to the framework entry requirements

There are no additional requirements to the general framework entry requirements

Job title(s)	Job role(s)
Mechanical Maintenance Technician	Carry out planned and emergency fault diagnosis and maintenance on mechanical equipment, restoring mechanical components to usable condition by repair, producing replacement components, assisting in the installation of mechanical equipment and carry out quality inspections.
Electronics Maintenance Technician	Carry out planned and emergency fault diagnosis and maintenance, test and repair electronic equipment and circuits/ communications equipment/ instrumentation and control equipment, service medical equipment and carry out quality inspections
Electrical Maintenance Technician	Carry out planned and emergency fault diagnosis, maintenance and testing on electrical equipment and circuits, modifying or rewiring electrical circuits, assisting in the installation of electrical/ electronic equipment and carry out quality inspections
Fluid Power Maintenance Technician	Carry out planned and emergency fault diagnosis, maintenance and testing on pneumatic/ hydraulic equipment and circuits, assisting in the installation of fluid power equipment and carry out quality inspections
Lift Services Maintenance Technician	Carry out planned and emergency fault diagnosis on lifts/escalators, inspecting and servicing lift/escalator equipment, rectifying and repairing faults in lifts/escalators and carrying out quality inspections
Plant and Systems Maintenance Technician	Carry out planned and emergency fault diagnosis and maintenance on mechanical and electrical equipment and systems, modifying or restoring plant/systems to usable condition by repair, producing replacement components, assisting in the installation of equipment and carry out quality inspections

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Engineering Maintenance (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/2084/2	EAL	179	426	
C1b	600/2082/9	City & Guilds	179	426	
C1c	600/2108/1	Edexcel	179	426	

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Maintenance Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	501/1112/7	EAL	78	600	

K2 - EAL Level 3 Diploma in Cycle Maintenance (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/0988/1	EAL	37	260	

Knowledge qualifications available to this pathway(cont.)

K3 - EAL Level 3 Diploma in Engineering Technology (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	501/1130/9	EAL	78	600	

K4 - EAL Level 3 Diploma in Maintenance Engineering Technology (Progressive) (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	501/1570/4	EAL	97	750	

K5 - Edexcel BTEC Level 3 Subsidiary Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/7841/0	Edexcel	60	360	

K6 - EAL Level 3 Diploma in Equipment Maintenance Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	600/1026/5	EAL	46	350	

K7 - City & Guilds Level 3 Diploma in Marine Construction, Systems Engineering and Maintenance (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	600/2306/5	City & Guilds	49	450	

Knowledge qualifications available to this pathway(cont.)

K8 - Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	500/7315/1	Edexcel	120	720	

K9 - Edexcel BTEC Level 3 Diploma in Electrical / Electronic Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	500/8098/2	Edexcel	120	720	

K10 - Edexcel BTEC Level 3 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	500/8154/8	Edexcel	120	720	

K11 - EAL Level 3 Certificate in Engineering Maintenance on Military Vehicles and Equipment (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	600/2119/6	EAL	23	180	

K12 - City & Guilds Level 3 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	600/0882/9	City & Guilds	54	480	

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K12a provide underpinning knowledge for C1a, C1b & C1c

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications deliver essential underpinning knowledge which supports the fundamental scientific and mathematical principles to equip apprentices with the understanding required to operate effectively and efficiently at craft and technician level within this sub-sector.

Advanced Apprentices must complete one of the Level 3 NVQ Extended Diploma's. However if the relevant QCF PEO units have already been achieved and certificated in a previous programme such as applicants who have completed the Improving Operational Performance Level 2 framework (Performing Engineering Operations Level 2 pathway) then they will be able to accredit these against the requirements of the Extended Level 3 Diploma. In such circumstances this would result in the minimum GLH requirements for the relevant pathway being reduced by a minimum of 123 hours and a minimum value of 27 credits (depending on the PEO units completed).

Delivery methods for knowledge based qualifications may vary, from a conventional college based environment, to delivery through a combination of this and written/web-based/distance learning materials.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	2	5
GCSE qualification in ICT (with enhanced functional content)	C	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	A	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

ICT is included in the required Functional skills

Progression routes into and from this pathway

Progression routes into the pathway, including those who:

- Have GCSEs in English, Maths, and Science (C) grade or above
- Have A or AS levels in Science, Technology, Engineering or Mathematics subjects
- Have completed an Intermediate level apprenticeship in Engineering
- Have completed an Intermediate level apprenticeship in Improving Operational Performance
- Are keen and motivated to work in a Engineering Maintenance environment
- Are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- Have previous work experience or employment in the Engineering sector
- Have completed a 14 to 19 Diploma in Engineering or Manufacturing
- Have completed a Young Apprenticeship in Engineering or other related area

Progression from this pathway:

Those who complete an Advanced Engineering Manufacture - Engineering Maintenance Apprenticeship:

While significant numbers of Advanced Apprentices will seek internal progression to team leader or supervisory roles within their companies, some will want to progress to a Higher Apprenticeship in Engineering; others may decide to opt for a Foundation degree or HNC/HND. More generally, most ex-apprentices aspire to a combination of internal promotion while at the same time undertaking company sponsored qualifications as specified above.

For further information on engineering progression routes we refer you to:

http://www.semta.org.uk/careers__qualifications/plan_your_career/progression_routes.aspx

http://www.semta.org.uk/pdf/Routeimage4Jan2010.pdf

UCAS points for this pathway:

(no information)

Delivery and assessment of employee rights and responsibilities

The nine national outcomes for Employee Rights and Responsibilities (ERR) are as follows:

1. The range of employer and employee statutory rights and responsibilities under employment law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and health and safety, together with the duties of employers.

2. Procedures and documentation which recognises and protects their relationship with their employer, including health and safety and equality and diversity training as part of the apprenticeship.

3. The range of sources and information and advice available to them on their employment rights and responsibilities, including Access to Work and Additional Learning Support.

4. The role played by their occupation in their organisation and industry.

5. Has an informed view of the types of career pathways that are open to them.

6. The types of representative bodies and understands their relevance to their industry and organisation and the main roles and responsibilities.

7. Where and how to get information and advice on their industry, occupation, training and career.

8. Can describe and work within their organisation's principles and codes of practice.

9. Can recognise and form a view on issues of public concern that affect their organisation and industry.

There are two methods of achieving ERR as set out below:

Method 1

Emta Awards Limited (EAL) have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

The qualification is detailed below:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

QCF qualification ref no: 600/0290/6
Credit value: 5 credits
Guided learning hours: 41

This qualification will enable apprentices to both know and understand the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being. Apprentices achieving the qualification will have demonstrated that they have the underpinning knowledge relevant for the engineering/manufacturing environment which satisfies the Specification for Apprenticeship Standards for England.

Method 2

Semta has produced an Apprentice ERR workbook that is available from:

customercare@eal.org.uk

The requirements for completing it must be explained to the apprentice right at the start of their training in order that they may take full advantage of their *company induction where significant amounts of information towards the national outcomes will be covered.

The workbook is intended to enable apprentices to know, understand and record the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being.

*Please note: All apprentices must receive a company induction programme

To claim final certification of the apprenticeship, one of the following forms of evidence will be required:

A qualification certificate for EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

or

A completed and countersigned Semta ERR workbook

Level 3, Pathway 6: Fabrication and Welding

Description of this pathway

Fabrication and Welding (Craft-person and Technician) total minimum credit value = 214 credits

Entry requirements for this pathway in addition to the framework entry requirements

There are no additional requirements to the general framework entry requirements

Job title(s)	Job role(s)
Sheet Metal Worker	Use metals/materials up to 3mm thick working from drawings to mark out shapes on the metal before cutting out. Cut, shape and join materials using hand/CNC cutting and pressing machines/thermal cutting equipment, fabricate and assemble pipework
Plater / Fabricator	Using metals/materials more than 3 millimetres thick working from engineering drawings and templates to mark out, cut and shape materials using manual or automated processes including thermal cutting equipment and join materials using fasteners or welding methods
Welder	Join sections, pipes, tubes or plates together by a manual or automated process. Plan, implement and monitor welding resources and activities, quality check welds, identify and solve problems. They usually specialise in more than one welding process according to product produced

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Fabrication and Welding (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1829/X	EAL	151	516	
C1b	600/2093/3	City & Guilds	151	516	
C1c	600/1862/8	Edexcel	151	516	

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	501/1130/9	EAL	78	600	

K2 - EAL Level 3 Diploma in Fabrication and Welding Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/1131/0	EAL	78	600	

Knowledge qualifications available to this pathway(cont.)

K3 - EAL Level 3 Diploma in Fabrication and Welding Engineering Technology (Progressive) (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	501/1310/0	EAL	97	750	

K4 - City & Guilds Level 3 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	600/0882/9	City & Guilds	54	480	

K5 - Edexcel BTEC Level 3 Subsidiary Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/7841/0	Edexcel	60	360	

K6 - City & Guilds Level 3 Diploma in Marine Construction, Systems Engineering and Maintenance(QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	600/2306/5	City & Guilds	49	450	

K7 - Edexcel BTEC Level 3 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	500/8154/8	Edexcel	120	720	

Knowledge qualifications available to this pathway(cont.)

K8 - ABC Level 3 Diploma in Fabrication and Welding Practice (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	500/6148/3	ABC Awards	48	480	

K9 - Edexcel BTEC Level 3 Diploma in Manufacturing Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	500/7319/9	Edexcel	120	720	

K10 - Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	500/7315/1	Edexcel	120	720	

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K10a provides underpinning knowledge for C1a, C1b & C1c

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications deliver essential underpinning knowledge which supports the fundamental scientific and mathematical principles to equip apprentices with the understanding required to operate effectively and efficiently at craft and technician level within this sub-sector.

Advanced Apprentices must complete one of the Level 3 NVQ Extended Diploma's. However if the relevant QCF PEO units have already been achieved and certificated in a previous programme such as applicants who have completed the Improving Operational Performance Level 2 framework (Performing Engineering Operations Level 2 pathway) then they will be able to accredit these against the requirements of the Extended Level 3 Diploma. In such circumstances this would result in the minimum GLH requirements for the relevant pathway being reduced by a minimum of 123 hours and a minimum value of 27 credits (depending on the PEO units completed).

Delivery methods for knowledge based qualifications may vary, from a conventional college based environment, to delivery through a combination of this and written/web-based/distance learning materials.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	2	5
GCSE qualification in ICT (with enhanced functional content)	C	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	A	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

ICT is included in the required Functional skills

Progression routes into and from this pathway

Progression routes into the pathway, including those who:

- Have GCSEs in English, Maths, and Science (C) grade or above
- Have A or AS levels in Science, Technology, Engineering or Mathematics subjects
- Have completed an Intermediate level apprenticeship in Engineering
- Have completed an Intermediate level apprenticeship in Improving Operational Performance
- Are keen and motivated to work in a Fabrication and Welding environment
- Are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- Have previous work experience or employment in the Engineering Manufacturing sector
- Have completed a 14 to 19 Diploma in Engineering or Manufacturing
- Have completed a Young Apprenticeship in Engineering or other related area

Progression from this pathway:

Those who complete an Advanced Engineering Manufacture - Fabrication and Welding Apprenticeship:

While significant numbers of Advanced Apprentices will seek internal progression to team leader or supervisory roles within their companies, some will want to progress to a Higher Apprenticeship in Engineering; others may decide to opt for a Foundation degree or HNC/HND. More generally, most ex-apprentices aspire to a combination of internal promotion while at the same time undertaking company sponsored qualifications as specified above.

For further information on engineering progression routes we refer you to:

http://www.semta.org.uk/careers__qualifications/plan_your_career/progression_routes.aspx

http://www.semta.org.uk/pdf/Routeimage4Jan2010.pdf

UCAS points for this pathway:

(no information)

Delivery and assessment of employee rights and responsibilities

The nine national outcomes for Employee Rights and Responsibilities (ERR) are as follows:

1. The range of employer and employee statutory rights and responsibilities under employment law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and health and safety, together with the duties of employers.

2. Procedures and documentation which recognises and protects their relationship with their employer, including health and safety and equality and diversity training as part of the apprenticeship.

3. The range of sources and information and advice available to them on their employment rights and responsibilities, including Access to Work and Additional Learning Support.

4. The role played by their occupation in their organisation and industry.

5. Has an informed view of the types of career pathways that are open to them.

6. The types of representative bodies and understands their relevance to their industry and organisation and the main roles and responsibilities.

7. Where and how to get information and advice on their industry, occupation, training and career.

8. Can describe and work within their organisation's principles and codes of practice.

9. Can recognise and form a view on issues of public concern that affect their organisation and industry.

There are two methods of achieving ERR as set out below:

Method 1

Emta Awards Limited (EAL) have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

The qualification is detailed below:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

QCF qualification ref no: 600/0290/6
Credit value: 5 credits
Guided learning hours: 41

This qualification will enable apprentices to both know and understand the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being. Apprentices achieving the qualification will have demonstrated that they have the underpinning knowledge relevant for the engineering/manufacturing environment which satisfies the Specification for Apprenticeship Standards for England.

Method 2

Semta has produced an Apprentice ERR workbook that is available from:

customercare@eal.org.uk

The requirements for completing it must be explained to the apprentice right at the start of their training in order that they may take full advantage of their *company induction where significant amounts of information towards the national outcomes will be covered.

The workbook is intended to enable apprentices to know, understand and record the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being.

*Please note: All apprentices must receive a company induction programme

To claim final certification of the apprenticeship, one of the following forms of evidence will be required:

A qualification certificate for EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

or

A completed and countersigned Semta ERR workbook

Level 3, Pathway 7: Materials Processing and Finishing

Description of this pathway

Materials Processing and Finishing (Craft-person and Technician) total minimum credit value = 191 credits

Entry requirements for this pathway in addition to the framework entry requirements

There are no additional requirements to the general framework entry requirements

Job title(s)	Job role(s)
Process engineer (Casting)	Responsible for ensuring the process is continually optimised. This will be by defining key process variables, implementing control measures and managing result data to ensure optimum performance is maintained.
Mould and Core maker (semi skilled)	Make or form wax or sand cores or moulds used in the production of metal castings in foundries.
Sand Caster	Produces sand moulds using loose and plated patterns. Locating, assembling and setting cores. Closing and securing sand moulds for casting
Die Caster	Press Tool & Mould Design / Modification, 3D Surface Modelling, Die Pattern and Casting Checks, Part Inspections and Quality Confirmations, Project control, Cost tracking, Supplier Support, Production Support and Process Planning.

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Materials Processing and Finishing (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1766/1	EAL	122	432	
C1b	600/1871/9	Edexcel	122	432	

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Casting Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	600/1025/3	EAL	78	600	

K2 - EAL Level 3 Diploma in Engineering and Technology (Progressive) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/1419/0	EAL	97	750	

K3 - EAL Level 3 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	501/1130/9	EAL	78	600	

Knowledge qualifications available to this pathway(cont.)

K4 - Edexcel BTEC Level 3 Subsidiary Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/7841/0	Edexcel	60	360	

K5 - Edexcel BTEC Level 3 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/8154/8	Edexcel	120	720	

K6 - Edexcel BTEC Level 3 Diploma in Aeronautical Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	500/7799/5	Edexcel	120	720	

K7 - Edexcel BTEC Level 3 Diploma in Manufacturing Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	500/7319/9	Edexcel	120	720	

K8 - City & Guilds Level 3 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	600/0882/9	City & Guilds	54	480	

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K8a provides underpinning knowledge for C1a and C1b

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications deliver essential underpinning knowledge which supports the fundamental scientific and mathematical principles to equip apprentices with the understanding required to operate effectively and efficiently at craft and technician level within this sub-sector.

Advanced Apprentices must complete one of the Level 3 NVQ Extended Diploma's. However if the relevant QCF PEO units have already been achieved and certificated in a previous programme such as applicants who have completed the Improving Operational Performance Level 2 framework (Performing Engineering Operations Level 2 pathway) then they will be able to accredit these against the requirements of the Extended Level 3 Diploma. In such circumstances this would result in the minimum GLH requirements for the relevant pathway being reduced by a minimum of 123 hours and a minimum value of 27 credits (depending on the PEO units completed).

Delivery methods for knowledge based qualifications may vary, from a conventional college based environment, to delivery through a combination of this and written/web-based/distance learning materials.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	2	5
GCSE qualification in ICT (with enhanced functional content)	C	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	A	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

ICT is included in the required Functional skills

Progression routes into and from this pathway

Progression routes into the pathway, including those who:

- Have GCSEs in English, Maths, and Science (C) grade or above
- Have A or AS levels in Science, Technology, Engineering or Mathematics subjects
- Have completed an Intermediate level apprenticeship in Engineering
- Have completed an Intermediate level apprenticeship in Improving Operational Performance
- Are keen and motivated to work in a Materials Processing and Finishing environment
- Are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- Have previous work experience or employment in the Manufacturing sector
- Have completed a 14 to 19 Diploma in Engineering or Manufacturing
- Have completed a Young Apprenticeship in Engineering or other related area

Progression from this pathway:

Those who complete an Advanced Engineering Manufacture - Materials Processing and Finishing Apprenticeship:

While significant numbers of Advanced Apprentices will seek internal progression to team leader or supervisory roles within their companies, some will want to progress to a Higher Apprenticeship in Engineering; others may decide to opt for a Foundation degree or HNC/HND. More generally, most ex-apprentices aspire to a combination of internal promotion while at the same time undertaking company sponsored qualifications as specified above.

For further information on engineering progression routes we refer you to:

http://www.semta.org.uk/careers__qualifications/plan_your_career/progression_routes.aspx

http://www.semta.org.uk/pdf/Routeimage4Jan2010.pdf

UCAS points for this pathway:

(no information)

Delivery and assessment of employee rights and responsibilities

The nine national outcomes for Employee Rights and Responsibilities (ERR) are as follows:

1. The range of employer and employee statutory rights and responsibilities under employment law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and health and safety, together with the duties of employers.

2. Procedures and documentation which recognises and protects their relationship with their employer, including health and safety and equality and diversity training as part of the apprenticeship.

3. The range of sources and information and advice available to them on their employment rights and responsibilities, including Access to Work and Additional Learning Support.

4. The role played by their occupation in their organisation and industry.

5. Has an informed view of the types of career pathways that are open to them.

6. The types of representative bodies and understands their relevance to their industry and organisation and the main roles and responsibilities.

7. Where and how to get information and advice on their industry, occupation, training and career.

8. Can describe and work within their organisation's principles and codes of practice.

9. Can recognise and form a view on issues of public concern that affect their organisation and industry.

There are two methods of achieving ERR as set out below:

Method 1

Emta Awards Limited (EAL) have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

The qualification is detailed below:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

QCF qualification ref no: 600/0290/6
Credit value: 5 credits
Guided learning hours: 41

This qualification will enable apprentices to both know and understand the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being. Apprentices achieving the qualification will have demonstrated that they have the underpinning knowledge relevant for the engineering/manufacturing environment which satisfies the Specification for Apprenticeship Standards for England.

Method 2

Semta has produced an Apprentice ERR workbook that is available from:

customercare@eal.org.uk

The requirements for completing it must be explained to the apprentice right at the start of their training in order that they may take full advantage of their *company induction where significant amounts of information towards the national outcomes will be covered.

The workbook is intended to enable apprentices to know, understand and record the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being.

*Please note: All apprentices must receive a company induction programme

To claim final certification of the apprenticeship, one of the following forms of evidence will be required:

A qualification certificate for EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

or

A completed and countersigned Semta ERR workbook

Level 3, Pathway 8: Engineering Technical Support

Description of this pathway

Engineering Technical Support (Craft-person and Technician) total minimum credit value = 219 credits

Entry requirements for this pathway in addition to the framework entry requirements

There are no additional requirements to the general framework entry requirements

Job title(s)	Job role(s)
CAD draught person	Work in engineering, using computer aided design (CAD) systems to draw overall designs or detailed technical drawings. They normally work in a team with other draughtsperson and engineering designers with each of them working on part of the project.
Measurement and control technician	Work with instruments that monitor production processes and equipment, in industries such as manufacturing, and engineering.
Quality control inspector	A skilled, time served individual with extensive experience of mechanical, electrical of electronic inspection techniques and processes
Technical support engineer	Provides support for all areas of the technical support function including communications software, test tools, performance, capacity planning, and e-commerce technology as required. Works as team member to develop, design and implement technical support systems or to complete specialty functions.
Metrology inspector	Carry out calibration of manufacturing instruments/gauges and measurement devices in controlled temperature environments to ensure they are accurately calibrated to required standards

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Engineering Technical Support (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1700/4	EAL	150	434	
C1b	600/2088/X	City & Guilds	150	434	
C1c	600/1861/6	Edexcel	150	434	

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	501/1130/9	EAL	78	600	

K2 - City & Guilds Level 3 Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	600/0882/9	City & Guilds	54	480	

Knowledge qualifications available to this pathway(cont.)

K3 - EAL Level 3 Diploma in Engineering and Technology (Progressive) (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	501/1419/0	EAL	97	750	

K4 - Edexcel BTEC Level 3 Subsidiary Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/7841/0	Edexcel	60	360	

K5 - Edexcel BTEC Level 3 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/8154/8	Edexcel	120	720	

K6 - Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	500/7315/1	Edexcel	120	720	

K7 - Edexcel BTEC Level 3 Diploma in Mechanical Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	500/7283/3	Edexcel	120	720	

Knowledge qualifications available to this pathway(cont.)

K8 - Edexcel BTEC Level 3 Diploma in Electrical / Electronic Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	500/8098/2	Edexcel	120	720	

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K8a provides underpinning knowledge for C1a, C1b & C1c

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications deliver essential underpinning knowledge which supports the fundamental scientific and mathematical principles to equip apprentices with the understanding required to operate effectively and efficiently at craft and technician level within this sub-sector.

Advanced Apprentices must complete one of the Level 3 NVQ Extended Diploma's. However if the relevant QCF PEO units have already been achieved and certificated in a previous programme such as applicants who have completed the Improving Operational Performance Level 2 framework (Performing Engineering Operations Level 2 pathway) then they will be able to accredit these against the requirements of the Extended Level 3 Diploma. In such circumstances this would result in the minimum GLH requirements for the relevant pathway being reduced by a minimum of 123 hours and a minimum value of 27 credits (depending on the PEO units completed).

Delivery methods for knowledge based qualifications may vary, from a conventional college based environment, to delivery through a combination of this and written/web-based/distance learning materials.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	2	5
GCSE qualification in ICT (with enhanced functional content)	C	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	A	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

ICT is included in the required Functional skills

Progression routes into and from this pathway

Progression routes into the pathway, including those who:

- Have GCSEs in English, Maths, and Science (C) grade or above
- Have A or AS levels in Science, Technology, Engineering or Mathematics subjects
- Have completed an Intermediate level apprenticeship in Engineering
- Have completed an Intermediate level apprenticeship in Improving Operational Performance
- Are keen and motivated to work in a Engineering Manufacturing environment
- Are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- Have previous work experience or employment in Engineering Manufacturing
- Have completed a 14 to 19 Diploma in Engineering or Manufacturing
- Have completed a Young Apprenticeship in Engineering or other related area

Progression from this pathway:

Those who complete an Advanced Engineering Manufacture - Engineering Technical Support Apprenticeship:

While significant numbers of Advanced Apprentices will seek internal progression to team leader or supervisory roles within their companies, some will want to progress to a Higher Apprenticeship in Engineering; others may decide to opt for a Foundation degree or HNC/HND. More generally, most ex-apprentices aspire to a combination of internal promotion while at the same time undertaking company sponsored qualifications as specified above.

For further information on engineering progression routes we refer you to:

http://www.semta.org.uk/careers__qualifications/plan_your_career/progression_routes.aspx

http://www.semta.org.uk/pdf/Routeimage4Jan2010.pdf

UCAS points for this pathway:

(no information)

Delivery and assessment of employee rights and responsibilities

The nine national outcomes for Employee Rights and Responsibilities (ERR) are as follows:

1. The range of employer and employee statutory rights and responsibilities under employment law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and health and safety, together with the duties of employers.

2. Procedures and documentation which recognises and protects their relationship with their employer, including health and safety and equality and diversity training as part of the apprenticeship.

3. The range of sources and information and advice available to them on their employment rights and responsibilities, including Access to Work and Additional Learning Support.

4. The role played by their occupation in their organisation and industry.

5. Has an informed view of the types of career pathways that are open to them.

6. The types of representative bodies and understands their relevance to their industry and organisation and the main roles and responsibilities.

7. Where and how to get information and advice on their industry, occupation, training and career.

8. Can describe and work within their organisation's principles and codes of practice.

9. Can recognise and form a view on issues of public concern that affect their organisation and industry.

There are two methods of achieving ERR as set out below:

Method 1

Emta Awards Limited (EAL) have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

The qualification is detailed below:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

QCF qualification ref no: 600/0290/6
Credit value: 5 credits
Guided learning hours: 41

This qualification will enable apprentices to both know and understand the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being. Apprentices achieving the qualification will have demonstrated that they have the underpinning knowledge relevant for the engineering/manufacturing environment which satisfies the Specification for Apprenticeship Standards for England.

Method 2

Semta has produced an Apprentice ERR workbook that is available from:

customercare@eal.org.uk

The requirements for completing it must be explained to the apprentice right at the start of their training in order that they may take full advantage of their *company induction where significant amounts of information towards the national outcomes will be covered.

The workbook is intended to enable apprentices to know, understand and record the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being.

*Please note: All apprentices must receive a company induction programme

To claim final certification of the apprenticeship, one of the following forms of evidence will be required:

A qualification certificate for EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

or

A completed and countersigned Semta ERR workbook

Level 3, Pathway 9: Electrical and Electronic Engineering

Description of this pathway

Electrical and Electronic Engineering (Craft-person and Technician) total minimum credit value = 186 credits

Entry requirements for this pathway in addition to the framework entry requirements

There are no additional requirements to the general framework entry requirements

Job title(s)	Job role(s)
Industrial Electrician	Install, inspect and test electrical equipment, wiring systems and components in factories and installations
Electrical Engineering Technician	Build, install and maintain electrical equipment such as generators, motors and transformers that produce and distribute electrical power. The work may include repairing electrical equipment, testing it and restoring it to full operation
Electrical design engineer	Design, manufacture and testing of electrical components, control systems, wiring layouts to meet customers needs
Measurement and Control Technician	Install, run, test and look after the instruments that monitor and control manufacturing processes, using sophisticated sensors and control systems to make sure products are measured, weighed, sorted and packaged correctly and efficiently.
Test Technician	Test, fault find and replace or repair components in electronic products or systems. May also test prototype electrical / electronic products and analyse the results
Electronics technician	Involved in designing, developing and manufacturing the electronic components of items such as telecommunications equipment; televisions; computers; mobile phones; hospital diagnostic and monitoring equipment.
Electronics Assembly technician	Assembly of electronic components into sub assemblies and whole units for telecommunications equipment, televisions, computers, hospital diagnostic equipment and control systems used in satellite tracking devices.
Electronics Manufacture Inspector	Use of non invasive inspection techniques Flying probe test, X-Ray, AOI, Endoscope, and other inspection methods to ensure production quality is maintained
Electronics Manufacture Technician	Circuit board assembly (PCB assembly), surface mount assembly, and conventional electronics assembly

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Electrical and Electronic Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1763/6	EAL	117	425	
C1b	600/1865/3	Edexcel	117	425	

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Electrical and Electronic Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	501/1121/8	EAL	78	600	

K2 - EAL Level 3 Diploma in Electrical and Electronic Engineering Technology (Progressive) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/1462/1	EAL	97	750	

K3 - EAL Level 3 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	501/1130/9	EAL	78	600	

Knowledge qualifications available to this pathway(cont.)

K4 - EAL Level 3 Diploma in Engineering and Technology (Progressive) (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	501/1419/0	EAL	97	750	

K5 - Edexcel BTEC Level 3 Subsidiary Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/7841/0	Edexcel	60	360	

K6 - Edexcel BTEC Level 3 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	500/8154/8	Edexcel	120	720	

K7 - Edexcel BTEC Level 3 Diploma in Electrical / Electronic Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	500/8098/2	Edexcel	120	720	

K8 - City & Guilds Level 3 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	600/0882/9	City & Guilds	54	480	

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K8a provides underpinning knowledge for C1a and C1b

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications deliver essential underpinning knowledge which supports the fundamental scientific and mathematical principles to equip apprentices with the understanding required to operate effectively and efficiently at craft and technician level within this sub-sector.

Advanced Apprentices must complete one of the Level 3 NVQ Extended Diploma's. However if the relevant QCF PEO units have already been achieved and certificated in a previous programme such as applicants who have completed the Improving Operational Performance Level 2 framework (Performing Engineering Operations Level 2 pathway) then they will be able to accredit these against the requirements of the Extended Level 3 Diploma. In such circumstances this would result in the minimum GLH requirements for the relevant pathway being reduced by a minimum of 123 hours and a minimum value of 27 credits (depending on the PEO units completed).

Delivery methods for knowledge based qualifications may vary, from a conventional college based environment, to delivery through a combination of this and written/web-based/distance learning materials.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	2	5
GCSE qualification in ICT (with enhanced functional content)	C	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	A	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

ICT is included in the required Functional skills

Progression routes into and from this pathway

Progression routes into the pathway, including those who:

- Have GCSEs in English, Maths, and Science (C) grade or above
- Have A or AS levels in Science, Technology, Engineering or Mathematics subjects
- Have completed an Intermediate level apprenticeship in Engineering
- Have completed an Intermediate level apprenticeship in Improving Operational Performance
- Are keen and motivated to work in a Electrical/Electronic engineering environment
- Are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- Have previous work experience or employment in the Electrical/Electronic sector
- Have completed a 14 to 19 Diploma in Engineering or Manufacturing
- Have completed a Young Apprenticeship in Engineering or other related area

Those who complete an Advanced Engineering Manufacture - Electrical and Electronic Engineering Apprenticeship:

While significant numbers of Advanced Apprentices will seek internal progression to team leader or supervisory roles within their companies, some will want to progress to a Higher Apprenticeship in Engineering; others may decide to opt for a Foundation degree or HNC/HND. More generally, most ex-apprentices aspire to a combination of internal promotion while at the same time undertaking company sponsored qualifications as specified above.

For more information on engineering progression routes we recommend you visit the websites hot-linked below.

http://www.semta.org.uk/careers__qualifications/plan_your_career/progression_routes.aspx

http://www.semta.org.uk/pdf/Routeimage4Jan2010.pdf

UCAS points for this pathway:

(no information)

Delivery and assessment of employee rights and responsibilities

The nine national outcomes for Employee Rights and Responsibilities (ERR) are as follows:

1. The range of employer and employee statutory rights and responsibilities under employment law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and health and safety, together with the duties of employers.

2. Procedures and documentation which recognises and protects their relationship with their employer, including health and safety and equality and diversity training as part of the apprenticeship.

3. The range of sources and information and advice available to them on their employment rights and responsibilities, including Access to Work and Additional Learning Support.

4. The role played by their occupation in their organisation and industry.

5. Has an informed view of the types of career pathways that are open to them.

6. The types of representative bodies and understands their relevance to their industry and organisation and the main roles and responsibilities.

7. Where and how to get information and advice on their industry, occupation, training and career.

8. Can describe and work within their organisation's principles and codes of practice.

9. Can recognise and form a view on issues of public concern that affect their organisation and industry.

There are two methods of achieving ERR as set out below:

Method 1

Emta Awards Limited (EAL) have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

The qualification is detailed below:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

QCF qualification ref no: 600/0290/6
Credit value: 5 credits
Guided learning hours: 41

This qualification will enable apprentices to both know and understand the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being. Apprentices achieving the qualification will have demonstrated that they have the underpinning knowledge relevant for the engineering/manufacturing environment which satisfies the Specification for Apprenticeship Standards for England.

Method 2

Semta has produced an Apprentice ERR workbook that is available from:

customercare@eal.org.uk

The requirements for completing it must be explained to the apprentice right at the start of their training in order that they may take full advantage of their *company induction where significant amounts of information towards the national outcomes will be covered.

The workbook is intended to enable apprentices to know, understand and record the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being.

*Please note: All apprentices must receive a company induction programme

To claim final certification of the apprenticeship, one of the following forms of evidence will be required:

A qualification certificate for EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

or

A completed and countersigned Semta ERR workbook

Level 3, Pathway 10: Installation and Commissioning

Description of this pathway

Installation and Commissioning (Craft-person and Technician) total minimum credit value = 240 credits

Entry requirements for this pathway in addition to the framework entry requirements

There are no additional requirements to the general framework entry requirements

Job title(s)	Job role(s)
Installation and Commissioning Technician (heavy plant equipment	Installation and commissioning of heavy engineering equipment such as turbine generators; gas compressors; process equipment; chemical reactors and pressure vessels.
Installation and Commissioning Technician (light equipment	Installation and commissioning of engineering equipment and systems: electrical; electronic; mechanical; fluid power pneumatic for conveyors, manufacturing lines, lifts and escalators

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Installation and Commissioning (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1650/4	EAL	176	425	
C1b	600/1866/5	Edexcel	176	425	

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	501/1130/9	EAL	78	600	

K2 - EAL Level 3 Diploma in Engineering and Technology (Progressive) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/1419/0	EAL	97	750	

K3 - Edexcel BTEC Level 3 Subsidiary Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/7841/0	Edexcel	60	360	

Knowledge qualifications available to this pathway(cont.)

K4 - City & Guilds Level 3 Diploma in Marine Construction, Systems Engineering and Maintenance (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	600/2306/5	City & Guilds	49	450	

K5 - Edexcel BTEC Level 3 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/8154/8	Edexcel	120	720	

K6 - Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	500/7315/1	Edexcel	120	720	

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K6a provides underpinning knowledge for C1a and C1b

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications deliver essential underpinning knowledge which supports the fundamental scientific and mathematical principles to equip apprentices with the understanding required to operate effectively and efficiently at craft and technician level within this sub-sector.

Advanced Apprentices must complete one of the Level 3 NVQ Extended Diploma's. However if the relevant QCF PEO units have already been achieved and certificated in a previous programme such as applicants who have completed the Improving Operational Performance Level 2 framework (Performing Engineering Operations Level 2 pathway) then they will be able to accredit these against the requirements of the Extended Level 3 Diploma. In such circumstances this would result in the minimum GLH requirements for the relevant pathway being reduced by a minimum of 123 hours and a minimum value of 27 credits (depending on the PEO units completed).

Delivery methods for knowledge based qualifications may vary, from a conventional college based environment, to delivery through a combination of this and written/web-based/distance learning materials.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	2	5
GCSE qualification in ICT (with enhanced functional content)	C	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	A	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

ICT is included in the required Functional skills

Progression routes into and from this pathway

Progression routes into the pathway, including those who:

- Have GCSEs in English, Maths, and Science (C) grade or above
- Have A or AS levels in Science, Technology, Engineering or Mathematics subjects
- Have completed an Intermediate level apprenticeship in Engineering
- Have completed an Intermediate level apprenticeship in Improving Operational Performance
- Are keen and motivated to work in an installation and Commissioning environment
- Are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- Have previous work experience or employment in the Engineering sector
- Have completed a 14 to 19 Diploma in Engineering or Manufacturing
- Have completed a Young Apprenticeship in Engineering or other related area

Those who complete an Advanced Engineering Manufacture - Installation and Commissioning Apprenticeship:

While significant numbers of Advanced Apprentice will seek internal progression to team leader or supervisory roles within their companies, some will want to progress to a Higher Apprenticeship in Engineering; others may decide to opt for a Foundation degree or HNC/HND. More generally, most ex-apprentices aspire to a combination of internal promotion while at the same time undertaking company sponsored qualifications as specified above.

For more information on engineering progression routes we recommend you visit the websites hot-linked below.

http://www.semta.org.uk/careers__qualifications/plan_your_career/progression_routes.aspx

http://www.semta.org.uk/pdf/Routeimage4Jan2010.pdf

UCAS points for this pathway:

(no information)

Delivery and assessment of employee rights and responsibilities

The nine national outcomes for Employee Rights and Responsibilities (ERR) are as follows:

1. The range of employer and employee statutory rights and responsibilities under employment law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and health and safety, together with the duties of employers.

2. Procedures and documentation which recognises and protects their relationship with their employer, including health and safety and equality and diversity training as part of the apprenticeship.

3. The range of sources and information and advice available to them on their employment rights and responsibilities, including Access to Work and Additional Learning Support.

4. The role played by their occupation in their organisation and industry.

5. Has an informed view of the types of career pathways that are open to them.

6. The types of representative bodies and understands their relevance to their industry and organisation and the main roles and responsibilities.

7. Where and how to get information and advice on their industry, occupation, training and career.

8. Can describe and work within their organisation's principles and codes of practice.

9. Can recognise and form a view on issues of public concern that affect their organisation and industry.

There are two methods of achieving ERR as set out below:

Method 1

Emta Awards Limited (EAL) have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

The qualification is detailed below:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

QCF qualification ref no: 600/0290/6
Credit value: 5 credits
Guided learning hours: 41

This qualification will enable apprentices to both know and understand the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being. Apprentices achieving the qualification will have demonstrated that they have the underpinning knowledge relevant for the engineering/manufacturing environment which satisfies the Specification for Apprenticeship Standards for England.

Method 2

Semta has produced an Apprentice ERR workbook that is available from:

customercare@eal.org.uk

The requirements for completing it must be explained to the apprentice right at the start of their training in order that they may take full advantage of their *company induction where significant amounts of information towards the national outcomes will be covered.

The workbook is intended to enable apprentices to know, understand and record the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being.

*Please note: All apprentices must receive a company induction programme

To claim final certification of the apprenticeship, one of the following forms of evidence will be required:

A qualification certificate for EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

or

A completed and countersigned Semta ERR workbook

Level 3, Pathway 11: Engineering Tool-making

Description of this pathway

Engineering Tool-making (Craft-person and Technician) total minimum credit value = 201 credits

Entry requirements for this pathway in addition to the framework entry requirements

(no information)

Job title(s)	Job role(s)
Toolmaker (manufacture)	Manufacture and maintenance of tools, jigs; dies; fixtures and moulds used in manufacturing, using a wide variety of machining, welding and hand finishing techniques.
Toolmaker (research and development)	Manufacture of prototype components for new product development using a wide variety of machining, welding and hand finishing techniques.

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Engineering Toolmaking (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1667/X	EAL	132	439	
C1b	600/1872/0	Edexcel	132	439	

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	501/1130/9	EAL	78	600	

K2 - EAL Level 3 Diploma in Engineering and Technology (Progressive) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/1419/0	EAL	97	750	

K3 - EAL Level 3 Diploma in Mechanical Engineering Technology (Progressive) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	501/1422/0	EAL	97	750	

Knowledge qualifications available to this pathway(cont.)

K4 - EAL Level 3 Diploma in Mechanical Engineering Technology (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	501/1155/3	EAL	78	600	

K5 - Edexcel BTEC Level 3 Subsidiary Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/7841/0	Edexcel	60	360	

K6 - Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	500/7315/1	Edexcel	120	720	

K7 - City & Guilds Level 3 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	600/0882/9	City & Guilds	54	480	

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K7a provides underpinning knowledge for C1a and C1b

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications deliver essential underpinning knowledge which supports the fundamental scientific and mathematical principles to equip apprentices with the understanding required to operate effectively and efficiently at craft and technician level within this sub-sector.

Advanced Apprentices must complete one of the Level 3 NVQ Extended Diploma's. However if the relevant QCF PEO units have already been achieved and certificated in a previous programme such as applicants who have completed the Improving Operational Performance Level 2 framework (Performing Engineering Operations Level 2 pathway) then they will be able to accredit these against the requirements of the Extended Level 3 Diploma. In such circumstances this would result in the minimum GLH requirements for the relevant pathway being reduced by a minimum of 123 hours and a minimum value of 27 credits (depending on the PEO units completed).

Delivery methods for knowledge based qualifications may vary, from a conventional college based environment, to delivery through a combination of this and written/web-based/distance learning materials.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	2	5
GCSE qualification in ICT (with enhanced functional content)	C	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	A	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

ICT is included in the required Functional skills

Progression routes into and from this pathway

Progression routes into the pathway, including those who:

- Have GCSEs in English, Maths, and Science (C) grade or above
- Have A or AS levels in Science, Technology, Engineering or Mathematics subjects
- Have completed an Intermediate level apprenticeship in Engineering
- Have completed an Intermediate level apprenticeship in Improving Operational Performance
- Are keen and motivated to work in a Tool-making environment
- Are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- Have previous work experience or employment in the Engineering sector
- Have completed a 14 to 19 Diploma in Engineering or Manufacturing
- Have completed a Young Apprenticeship in Engineering or other related area

Those who complete an Advanced Engineering Manufacture - Tool-making Apprenticeship:

While significant numbers of Advanced Apprentices will seek internal progression to team leader or supervisory roles within their companies, some will want to progress to a Higher Apprenticeship in Engineering; others may decide to opt for a Foundation degree or HNC/HND. More generally, most ex-apprentices aspire to a combination of internal promotion while at the same time undertaking company sponsored qualifications as specified above.

For more information on engineering progression routes we recommend you visit the websites hot-linked below.

http://www.semta.org.uk/careers__qualifications/plan_your_career/progression_routes.aspx

http://www.semta.org.uk/pdf/Routeimage4Jan2010.pdf

UCAS points for this pathway:

(no information)

Delivery and assessment of employee rights and responsibilities

The nine national outcomes for Employee Rights and Responsibilities (ERR) are as follows:

1. The range of employer and employee statutory rights and responsibilities under employment law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and health and safety, together with the duties of employers.

2. Procedures and documentation which recognises and protects their relationship with their employer, including health and safety and equality and diversity training as part of the apprenticeship.

3. The range of sources and information and advice available to them on their employment rights and responsibilities, including Access to Work and Additional Learning Support.

4. The role played by their occupation in their organisation and industry.

5. Has an informed view of the types of career pathways that are open to them.

6. The types of representative bodies and understands their relevance to their industry and organisation and the main roles and responsibilities.

7. Where and how to get information and advice on their industry, occupation, training and career.

8. Can describe and work within their organisation's principles and codes of practice.

9. Can recognise and form a view on issues of public concern that affect their organisation and industry.

There are two methods of achieving ERR as set out below:

Method 1

Emta Awards Limited (EAL) have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

The qualification is detailed below:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

QCF qualification ref no: 600/0290/6
Credit value: 5 credits
Guided learning hours: 41

This qualification will enable apprentices to both know and understand the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being. Apprentices achieving the qualification will have demonstrated that they have the underpinning knowledge relevant for the engineering/manufacturing environment which satisfies the Specification for Apprenticeship Standards for England.

Method 2

Semta has produced an Apprentice ERR workbook that is available from:

customercare@eal.org.uk

The requirements for completing it must be explained to the apprentice right at the start of their training in order that they may take full advantage of their *company induction where significant amounts of information towards the national outcomes will be covered.

The workbook is intended to enable apprentices to know, understand and record the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being.

*Please note: All apprentices must receive a company induction programme

To claim final certification of the apprenticeship, one of the following forms of evidence will be required:

A qualification certificate for EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

or

A completed and countersigned Semta ERR workbook

Level 3, Pathway 12: Automotive

Description of this pathway

Automotive (Craft-person and Technician) total minimum credit value = 218 credits

Entry requirements for this pathway in addition to the framework entry requirements

There are no additional requirements to the general framework entry requirements

Job title(s)	Job role(s)
Motorsport Technician (Mechanical)	Removal and refitting of motorsports engines, transmissions; suspension; steering; brakes; fuel systems and other components both at the factory and trackside during competition.
Motorsport Technician (Electrical / Electronic)	Removal and refitting of Electrical / Electronic equipment on motorsport vehicles, carring out electrical / electronic fault diagnosis on competition and experimental vehicles
Vehicle Builder (commercial and passenger carrying vehicles)	Manufacture, repair and refurbish commercial and passenger carrying vehicles by building and repairing bespoke vehicle bodies from the chassis upwards
Vehicle development technician	Assemble body sub-assemblies using a variety of joining techniques to produce an experimental vehicle, dissassemble and modify after testing.
Vehicle Test Technician	Testing of mechanical; electrical; electronic; navigation; in-vehicle entertainment and safety systems under varying conditions and evironments.

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Automotive Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1784/3	EAL	143	432	
C1b	600/2109/3	Edexcel	143	432	

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Engineering and Technology (Progressive) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	501/1419/0	EAL	97	750	

K2 - EAL Level 3 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/1130/9	EAL	78	600	

K3 - Edexcel BTEC Level 3 Diploma in Manufacturing Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/7319/9	Edexcel	120	720	

Knowledge qualifications available to this pathway(cont.)

K4 - Edexcel BTEC Level 3 Subsidiary Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/7841/0	Edexcel	60	360	

K5 - Edexcel BTEC Level 3 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/8154/8	Edexcel	120	720	

K6 - Edexcel BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	500/7315/1	Edexcel	120	720	

K7 - IMIAL Level 3 Diploma In Motorsport Vehicle Maintenance and Repair (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	600/2579/7	IMIAL	69	538	

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K7a provides underpinning knowledge for C1a and C1b

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications deliver essential underpinning knowledge which supports the fundamental scientific and mathematical principles to equip apprentices with the understanding required to operate effectively and efficiently at craft and technician level within this sub-sector.

Advanced Apprentices must complete one of the Level 3 NVQ Extended Diploma's. However if the relevant QCF PEO units have already been achieved and certificated in a previous programme such as applicants who have completed the Improving Operational Performance Level 2 framework (Performing Engineering Operations Level 2 pathway) then they will be able to accredit these against the requirements of the Extended Level 3 Diploma. In such circumstances this would result in the minimum GLH requirements for the relevant pathway being reduced by a minimum of 123 hours and a minimum value of 27 credits (depending on the PEO units completed).

Delivery methods for knowledge based qualifications may vary, from a conventional college based environment, to delivery through a combination of this and written/web-based/distance learning materials.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	2	5
GCSE qualification in ICT (with enhanced functional content)	C	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	A	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

ICT is included in the required Functional skills

Progression routes into and from this pathway

Progression routes into the pathway, including those who:

- Have GCSEs in English, Maths, and Science (C) grade or above
- Have A or AS levels in Science, Technology, Engineering or Mathematics subjects
- Have completed an Intermediate level apprenticeship in Engineering
- Have completed an Intermediate level apprenticeship in Improving Operational Performance
- Are keen and motivated to work in a Automotive engineering environment
- Are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- Have previous work experience or employment in the Automotive sector
- Have completed a 14 to 19 Diploma in Engineering or Manufacturing
- Have completed a Young Apprenticeship in Engineering or other related area

Those who complete an Advanced Engineering Manufacture - Automotive Apprenticeship:

While significant numbers of Advanced Apprenticeship will seek internal progression to team leader or supervisory roles within their companies, some will want to progress to a Higher Apprenticeship in Engineering; others may decide to opt for a Foundation degree or HNC/HND. More generally, most ex-apprentices aspire to a combination of internal promotion while at the same time undertaking company sponsored qualifications as specified above.

For more information on engineering progression routes we recommend you visit the websites hot-linked below.

http://www.semta.org.uk/careers__qualifications/plan_your_career/progression_routes.aspx

http://www.semta.org.uk/pdf/Routeimage4Jan2010.pdf

UCAS points for this pathway:

(no information)

Delivery and assessment of employee rights and responsibilities

The nine national outcomes for Employee Rights and Responsibilities (ERR) are as follows:

1. The range of employer and employee statutory rights and responsibilities under employment law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and health and safety, together with the duties of employers.

2. Procedures and documentation which recognises and protects their relationship with their employer, including health and safety and equality and diversity training as part of the apprenticeship.

3. The range of sources and information and advice available to them on their employment rights and responsibilities, including Access to Work and Additional Learning Support.

4. The role played by their occupation in their organisation and industry.

5. Has an informed view of the types of career pathways that are open to them.

6. The types of representative bodies and understands their relevance to their industry and organisation and the main roles and responsibilities.

7. Where and how to get information and advice on their industry, occupation, training and career.

8. Can describe and work within their organisation's principles and codes of practice.

9. Can recognise and form a view on issues of public concern that affect their organisation and industry.

There are two methods of achieving ERR as set out below:

Method 1

Emta Awards Limited (EAL) have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

The qualification is detailed below:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

QCF qualification ref no: 600/0290/6
Credit value: 5 credits
Guided learning hours: 41

This qualification will enable apprentices to both know and understand the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being. Apprentices achieving the qualification will have demonstrated that they have the underpinning knowledge relevant for the engineering/manufacturing environment which satisfies the Specification for Apprenticeship Standards for England.

Method 2

Semta has produced an Apprentice ERR workbook that is available from:

customercare@eal.org.uk

The requirements for completing it must be explained to the apprentice right at the start of their training in order that they may take full advantage of their *company induction where significant amounts of information towards the national outcomes will be covered.

The workbook is intended to enable apprentices to know, understand and record the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being.

*Please note: All apprentices must receive a company induction programme

To claim final certification of the apprenticeship, one of the following forms of evidence will be required:

A qualification certificate for EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

or

A completed and countersigned Semta ERR workbook

Level 3, Pathway 13: Engineering Woodworking, Pattern and Modelmaking

Description of this pathway

Engineering Woodworking, Pattern and Model-making (Craft-person and Technician) total minimum credit value = 208 credits

Entry requirements for this pathway in addition to the framework entry requirements

There are no additional requirements to the general framework entry requirements

Job title(s)	Job role(s)
Engineering woodworker	Produce pattern, core-box or model components using wood-working machines.
Engineering model maker	Produce concept engineering prototype models, architectural models, planning models, plastic fabrications and visual displays in a range of materials.
CNC/NC Wood machinist	Produce pattern, corebox or model components using NC/CNC machines

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 Extended Diploma in Engineering Woodworking, Pattern and Model Making (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1769/7	EAL	133	432	
C1b	600/1873/2	Edexcel	133	432	

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Engineering Technology (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	501/1130/9	EAL	78	600	

K2 - Edexcel BTEC Level 3 Subsidiary Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7841/0	Edexcel	60	360	

K3 - Edexcel BTEC Level 3 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/8154/8	Edexcel	120	720	

Knowledge qualifications available to this pathway(cont.)

K4 - Edexcel BTEC Level 3 Diploma in Manufacturing Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/7319/9	Edexcel	120	720	

K5 - EAL Level 3 Diploma in Casting Technology (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	600/1025/3	EAL	78	600	

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K5a provides underpinning knowledge for C1a & C1b

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications deliver essential underpinning knowledge which supports the fundamental scientific and mathematical principles to equip apprentices with the understanding required to operate effectively and efficiently at craft and technician level within this sub-sector.

Advanced Apprentices must complete one of the Level 3 NVQ Extended Diploma's. However if the relevant QCF PEO units have already been achieved and certificated in a previous programme such as applicants who have completed the Improving Operational Performance Level 2 framework (Performing Engineering Operations Level 2 pathway) then they will be able to accredit these against the requirements of the Extended Level 3 Diploma. In such circumstances this would result in the minimum GLH requirements for the relevant pathway being reduced by a minimum of 123 hours and a minimum value of 27 credits (depending on the PEO units completed).

Delivery methods for knowledge based qualifications may vary, from a conventional college based environment, to delivery through a combination of this and written/web-based/distance learning materials.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	2	5
GCSE qualification in ICT (with enhanced functional content)	C	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	A	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

ICT is included in the required Functional skills

Progression routes into and from this pathway

Progression routes into the pathway, including those who:

- Have GCSEs in English, Maths, and Science (C) grade or above
- Have A or AS levels in Science, Technology, Engineering or Mathematics subjects
- Have completed an Intermediate level apprenticeship in Engineering
- Have completed an Intermediate level apprenticeship in Improving Operational Performance
- Are keen and motivated to work in an Engineering Woodworking/Pattern/Model Making environment
- Are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- Have previous work experience or employment in the Engineering Manufacturing sector
- Have completed a 14 to 19 Diploma in Engineering or Manufacturing

- Have completed a Young Apprenticeship in Engineering or other related area

Those who complete an Advanced Engineering Manufacture - Engineering Woodworking, Pattern and Model making Apprenticeship:

While significant numbers of Advanced Apprentices will seek internal progression to team leader or supervisory roles within their companies, some will want to progress to a Higher Apprenticeship in Engineering; others may decide to opt for a Foundation degree or HNC/HND. More generally, most ex-apprentices aspire to a combination of internal promotion while at the same time undertaking company sponsored qualifications as specified above.

For more information on engineering progression routes we recommend you visit the websites hot-linked below.

http://www.semta.org.uk/careers__qualifications/plan_your_career/progression_routes.aspx

http://www.semta.org.uk/pdf/Routeimage4Jan2010.pdf

UCAS points for this pathway:

(no information)

Delivery and assessment of employee rights and responsibilities

The nine national outcomes for Employee Rights and Responsibilities (ERR) are as follows:

1. The range of employer and employee statutory rights and responsibilities under employment law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and health and safety, together with the duties of employers.

2. Procedures and documentation which recognises and protects their relationship with their employer, including health and safety and equality and diversity training as part of the apprenticeship.

3. The range of sources and information and advice available to them on their employment rights and responsibilities, including Access to Work and Additional Learning Support.

4. The role played by their occupation in their organisation and industry.

5. Has an informed view of the types of career pathways that are open to them.

6. The types of representative bodies and understands their relevance to their industry and organisation and the main roles and responsibilities.

7. Where and how to get information and advice on their industry, occupation, training and career.

8. Can describe and work within their organisation's principles and codes of practice.

9. Can recognise and form a view on issues of public concern that affect their organisation and industry.

There are two methods of achieving ERR as set out below:

Method 1

Emta Awards Limited (EAL) have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

The qualification is detailed below:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

QCF qualification ref no: 600/0290/6
Credit value: 5 credits
Guided learning hours: 41

This qualification will enable apprentices to both know and understand the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being. Apprentices achieving the qualification will have demonstrated that they have the underpinning knowledge relevant for the engineering/manufacturing environment which satisfies the Specification for Apprenticeship Standards for England.

Method 2

Semta has produced an Apprentice ERR workbook that is available from:

customercare@eal.org.uk

The requirements for completing it must be explained to the apprentice right at the start of their training in order that they may take full advantage of their *company induction where significant amounts of information towards the national outcomes will be covered.

The workbook is intended to enable apprentices to know, understand and record the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being.

*Please note: All apprentices must receive a company induction programme

To claim final certification of the apprenticeship, one of the following forms of evidence will be required:

A qualification certificate for EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

or

A completed and countersigned Semta ERR workbook

Level 3, Pathway 14: Engineering Leadership

Description of this pathway

Engineering Leadership total minimum credit value = 203 credits

Entry requirements for this pathway in addition to the framework entry requirements

There are no additional requirements to the general framework entry requirements

Job title(s)	Job role(s)
Project leader (engineering)	Produce specifications, research, create and evaluate engineering designs, managing resources, scheduling and monitoring project activities using project management techniques
Project Manager (engineering)	Planning, organising, securing and managing resources to bring about the successful completion of specific project objectives.
Product support Engineer	Deal with customers technical enquiries, evaluate production issues and provide engineering solutions, document engineering improvements and introduce them to production.

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Engineering Leadership (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1867/7	Edexcel	128	430	
C1b	600/2245/0	EAL	128	430	

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	501/1130/9	EAL	78	600	

K2 - EAL Level 3 Diploma in Engineering and Technology (Progressive) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/1419/0	EAL	97	750	

K3 - Edexcel BTEC Level 3 Subsidiary Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/7841/0	Edexcel	60	360	

Knowledge qualifications available to this pathway(cont.)

K4 - Edexcel BTEC Level 3 Diploma in Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/8154/8	Edexcel	120	720	

K5 - EDEXCEL BTEC Level 3 Diploma in Mechanical Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/7283/3	EDEXCEL	120	720	

K6 - EDEXCEL BTEC Level 3 Diploma in Aeronautical Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	500/7799/5	EDEXCEL	120	720	

K7 - EDEXCEL BTEC Level 3 Diploma in Manufacturing Engineering (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	500/7319/9	EDEXCEL	120	720	

K8 - Edexcel BTEC Level 3 Diploma in Construction and the Built Environment (QCF)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	500/7137/3	Edexcel	120	720	

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K8a provides underpinning knowledge for C1a and C1b

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications deliver essential underpinning knowledge which supports the fundamental scientific and mathematical principles to equip apprentices with the understanding required to operate effectively and efficiently at craft and technician level within this sub-sector.

Advanced Apprentices must complete one of the Level 3 NVQ Extended Diploma's. However if the relevant QCF PEO units have already been achieved and certificated in a previous programme such as applicants who have completed the Improving Operational Performance Level 2 framework (Performing Engineering Operations Level 2 pathway) then they will be able to accredit these against the requirements of the Extended Level 3 Diploma. In such circumstances this would result in the minimum GLH requirements for the relevant pathway being reduced by a minimum of 123 hours and a minimum value of 27 credits (depending on the PEO units completed).

Delivery methods for knowledge based qualifications may vary, from a conventional college based environment, to delivery through a combination of this and written/web-based/distance learning materials.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	2	5
GCSE qualification in ICT (with enhanced functional content)	C	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	A	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

ICT is included in the required Functional skills

Progression routes into and from this pathway

Progression routes into the pathway, including those who:

- Have GCSEs in English, Maths, and Science (C) grade or above
- Have A or AS levels in Science, Technology, Engineering or Mathematics subjects
- Have completed an Intermediate level apprenticeship in Engineering
- Have completed an Intermediate level apprenticeship in Improving Operational Performance
- Are keen and motivated to work in an Engineering environment
- Are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- Have previous work experience or employment in the Engineering sector
- Have completed a 14 to 19 Diploma in Engineering or Manufacturing
- Have completed a Young Apprenticeship in Engineering or other related area

Those who complete an Advanced Engineering Manufacture - Engineering Leadership Apprenticeship:

While significant numbers of Advanced Apprentice will seek internal progression to team leader or supervisory roles within their companies, some will want to progress to a Higher Apprenticeship in Engineering; others may decide to opt for a Foundation degree or HNC/HND. More generally, most ex-apprentices aspire to a combination of internal promotion while at the same time undertaking company sponsored qualifications as specified above.

For more information on engineering progression routes we recommend you visit the websites hot-linked below.

http://www.semta.org.uk/careers__qualifications/plan_your_career/progression_routes.aspx

http://www.semta.org.uk/pdf/Routeimage4Jan2010.pdf

UCAS points for this pathway:

(no information)

Delivery and assessment of employee rights and responsibilities

The nine national outcomes for Employee Rights and Responsibilities (ERR) are as follows:

1. The range of employer and employee statutory rights and responsibilities under employment law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and health and safety, together with the duties of employers.

2. Procedures and documentation which recognises and protects their relationship with their employer, including health and safety and equality and diversity training as part of the apprenticeship.

3. The range of sources and information and advice available to them on their employment rights and responsibilities, including Access to Work and Additional Learning Support.

4. The role played by their occupation in their organisation and industry.

5. Has an informed view of the types of career pathways that are open to them.

6. The types of representative bodies and understands their relevance to their industry and organisation and the main roles and responsibilities.

7. Where and how to get information and advice on their industry, occupation, training and career.

8. Can describe and work within their organisation's principles and codes of practice.

9. Can recognise and form a view on issues of public concern that affect their organisation and industry.

There are two methods of achieving ERR as set out below:

Method 1

Emta Awards Limited (EAL) have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

The qualification is detailed below:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

QCF qualification ref no: 600/0290/6
Credit value: 5 credits
Guided learning hours: 41

This qualification will enable apprentices to both know and understand the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being. Apprentices achieving the qualification will have demonstrated that they have the underpinning knowledge relevant for the engineering/manufacturing environment which satisfies the Specification for Apprenticeship Standards for England.

Method 2

Semta has produced an Apprentice ERR workbook that is available from:

customercare@eal.org.uk

The requirements for completing it must be explained to the apprentice right at the start of their training in order that they may take full advantage of their *company induction where significant amounts of information towards the national outcomes will be covered.

The workbook is intended to enable apprentices to know, understand and record the principles associated with the nine national outcomes such as the world of work and how they are constrained by various legal and organisational procedures for their own well-being.

*Please note: All apprentices must receive a company induction programme

To claim final certification of the apprenticeship, one of the following forms of evidence will be required:

A qualification certificate for EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

or

A completed and countersigned Semta ERR workbook

The remaining sections apply to all levels and pathways within this framework.

How equality and diversity will be met

Semta recognises the training and business benefits of having apprentices from a wide variety of diverse backgrounds. We are committed to ensuring equality and diversity drives all aspects of apprentice selection and recruitment. Equal opportunity and diversity refers to the active elimination of unlawful or unfair discrimination against any person or group on the grounds of gender, race, colour, nationality, ethnic origin, religion, age, sexual orientation, marriage and civil partnership, pregnancy and maternity, political belief, disability and where appropriate, prison/offender background where this is deemed irrelevant.

Despite the encouraging numbers of both female participants and ethnic minorities on the 14 to 19 Engineering and Manufacturing Diplomas and Young Apprenticeship programmes, the Engineering sector still has a significant way to go to encourage women into engineering and manufacturing careers. Semta wishes to make a Gender Equality Commitment. Semta has signed the United Kingdom Resource Centre (UKRC) CEO's charter in a bid to step up female recruitment in its key sectors and programmes. Due to impending skills gaps it is estimated that 187,000 people will be required to be recruited and trained between 2010-2016 within Semta's sectors of aerospace, automotive, bioscience, composites, electrical, electronics, maintenance, marine, mathematics, metals and engineered metal products, renewables and science.

The UKRC is the Government's leading body for advanced gender equality in science, engineering and technology (SET) and the CEO's charter is a formal commitment to the UKRC's agenda to challenge the under-representation of women in SET. Women make up 50% of the labour market, yet they make up less than 20% of the labour market in science, engineering and technology.

The UKRC believes that only a concerted effort by the SET industry will break down the gender barriers that exist in traditionally male-dominated environments and we want to be part of a new consensus which will create an inclusive working environment for women. The manufacturing industries in which this framework operates are traditionally dominated by a white, male workforce. However, faced with an aging workforce and the probability of skill shortages we must look to attract new entrants from a much more diverse recruitment pool. This means that all young people and adults considering engineering and manufacturing as a career are welcome.

Providers of apprenticeship training including employers must be able to demonstrate there are no overt or covert discriminatory practices in the selection and employment of apprentices this can be demonstrated by the implementing of a Single Equality Scheme (SES). The new Equality Duty (part of the Single Equality Bill) introduced to the public sector requires all public sector bodies to produce a SES combining their current race, disability and gender schemes and should be recognised by all providers of apprenticeship training. The implementation of a SES demonstrates the organisation's commitment to equality and diversity by identifying new and improved ways of working to ensure the organisation is more efficient and effective in meeting the diverse needs of both staff and customers. All those who recruit apprentices, be they colleges, training providers or employers, must comply with the Equality act of 2010 and apply the Equality and Diversity legislation taking full account of the following:

- The Sex Discrimination Act 1975 and Code of Practice
- The Race Relations Act 1976 and Code of Practice
- The Disability Discrimination Act 1995 and Code of Practice
- Employment Equality (Religion or Belief) Regulations 2003
- Employment Equality (Sexual Orientation) Regulations 2003
- Employment Equality (Age) Regulations 2006
- The Equality Act 2010

Providers of apprenticeship training and employers must also actively monitor equality of opportunity and diversity procedures and take positive action where necessary to ensure equal access and treatment for all. Apprenticeships must be seen as a vital route to encourage and facilitate long term change in the equality and diversity of the engineering industry, therefore entry conditions into this framework are extremely flexible. All effort should be made to increase the diversity of our apprentice population.

On and off the job guided learning (England)

Total GLH for each pathway

Semta recognises that all apprentices have different learning needs and some apprentices will require more Guided Learning Hours (GLH) while others will require less. We have outlined the GLH delivered to apprentices as set out in the GLH in the individual qualifications. This represents a typical apprentice with minimum experience in the sector, as specified by the Specification for Apprenticeship Standards for England (SASE).

The SASE requires that:

A minimum of 280 GLH of which at least 100 GLH or 30 % (whichever is greater) must be delivered off the job and clearly evidenced. Where an apprentice completes an apprenticeship part way through the final 12 month period (which is after the first twelve months), an apprentice must receive a proportion of the minimum of 280 GLH which is at least equal to the proportion of the minimum of 280 GLH of the final 12 month period spent on the apprenticeship.

Both on and off-the-job GLH must be clearly evidenced. This SASE requirement for on-the-job and off-the-job guided learning is intended to meet the requirement in section 27(2) (b) of the Apprenticeships, Skills, Children & Learning (ASCL) Act for on-the-job and off-the-job training

Total GLH for each pathway

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 1: Aerospace

Pathway duration approximately 42 months depending on the qualification and unit options selected

Level 3 NVQ Extended Diploma in Aeronautical Engineering (QCF)

Total minimum credit value: 240 credits
Total GLH = 1191 hours
• Competence = 441 minimum hours /165 minimum credits
• Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
• Knowledge = 60 minimum credits (based on the smallest technical certificate credit)
• Functional Skills (notional value 45 hours x 3) =135 hours / 15 credits
• Mentoring 154 weeks x 1 hour/week =154 hours
• PLTS = 60 hours
• ERR = 41 hours
Year 1=340 hours Year 2=340 hours Year 3=340 hours Year 4=171 hours

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 2: Marine (Ship Building, maintenance and repair)

Pathway duration approximately 42 months depending on the qualification and unit options selected

Level 3 NVQ Extended Diploma in Marine Engineering (QCF)

Total minimum credit value: 211 credits
Total GLH = 1174 hours
• Competence = 424 minimum hours /142 minimum credits
• Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
• Knowledge = 54 minimum credits (based on the smallest technical certificate credit)
• Functional Skills (notional value 45 hours x 3) =135 hours / 15 credits
• Mentoring 154 weeks x 1 hour/week =154 hours
• PLTS = 60 hours
• ERR = 41 hours
Year 1=335 hours Year 2=335 hours Year 3=335 hours Year 4=169 hours

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 3: Mechanical Manufacturing Engineering

Pathway duration approximately 42 months depending on the qualification and unit options selected

Level 3 NVQ Extended Diploma in Mechanical Manufacturing Engineering (QCF)

Total minimum credit value: 175 credits
Total GLH = 1189 hours
• Competence = 439 minimum hours /106 minimum credits
• Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
• Knowledge = 54 minimum credits (based on the smallest technical certificate credit)
• Functional Skills (notional value 45 hours x 3) =135 hours / 15 credits
• Mentoring 154 weeks x 1 hour/week =154 hours
• PLTS = 60 hours
• ERR = 41 hours
Year 1=340 hours Year 2=340 hours Year 3=340 hours Year 4=169 hours

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 4: Marine (Yacht and Boat Building, maintenance and repair)

Pathway duration approximately 42 months depending on the qualification and unit options selected

Level 3 NVQ Diploma in Marine Engineering (QCF)

Total minimum credit value: 179 credits
Total GLH = 1141 hours
• Competence = 301 minimum hours /115 minimum credits
• Knowledge = 450 minimum hours (based on the smallest technical certificate GLH)

• Knowledge = 49 minimum credits (based on the smallest technical certificate credit)
• Functional Skills (notional value 45 hours x 3) =135 hours / 15 credits
• Mentoring 154 weeks x 1 hour/week =154 hours
• PLTS = 60 hours
• ERR = 41 hours
Year 1=326 hours Year 2=326 hours Year 3=326 hours Year 4=163 hours

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 5: Engineering Maintenance

Pathway duration approximately 42 months depending on the qualification and unit options selected

Level 3 NVQ Extended Diploma in Engineering Maintenance (QCF)

Total minimum credit value: 217 credits
Total GLH = 996 hours
• Competence = 426 minimum hours /179 minimum credits
• Knowledge = 180 minimum hours (based on the smallest technical certificate GLH)
• Knowledge = 23 minimum credits (based on the smallest technical certificate credit)
• Functional Skills (notional value 45 hours x 3) =135 hours / 15 credits
• Mentoring 154 weeks x 1 hour/week =154 hours
• PLTS = 60 hours
• ERR = 41 hours
Year 1=285 hours Year 2=285 hours Year 3=285 hours Year 4=141 hours

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 6: Fabrication and Welding

Pathway duration approximately 42 months depending on the qualification and unit options selected

Level 3 NVQ Extended Diploma in Fabrication and Welding Engineering (QCF)

Total minimum credit value: 214 credits
Total GLH = 1266 hours
• Competence = 516 minimum hours /151 minimum credits
• Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
• Knowledge = 48 minimum credits (based on the smallest technical certificate credit)
• Functional Skills (notional value 45 hours x 3) =135 hours / 15 credits
• Mentoring 154 weeks x 1 hour/week =154 hours
• PLTS = 60 hours

• ERR = 41 hours
Year 1=362 hours Year 2=362 hours Year 3=362 hours Year 4=180 hours

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 7: Materials Processing & Finishing

Pathway duration approximately 42 months depending on the qualification and unit options selected

Level 3 NVQ Extended Diploma Materials Processing & Finishing (QCF)

Total minimum credit value: 191 credits
Total GLH = 1182 hours
• Competence = 432 minimum hours /122 minimum credits
• Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
• Knowledge = 54 minimum credits (based on the smallest technical certificate credit)
• Functional Skills (notional value 45 hours x 3) =135 hours / 15 credits
• Mentoring 154 weeks x 1 hour/week =154 hours
• PLTS = 60 hours
• ERR = 41 hours
Year 1=338 hours Year 2=338 hours Year 3=338 hours Year 4=168 hours

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 8: Engineering Technical Support

Pathway duration approximately 42 months depending on the qualification and unit options selected

Level 3 NVQ Extended Diploma in Engineering Technical Support (QCF)

Total minimum credit value: 219 credits
Total GLH = 1184 hours
• Competence = 434 minimum hours /150 minimum credits
• Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
• Knowledge = 54 minimum credits (based on the smallest technical certificate credit)
• Functional Skills (notional value 45 hours x 3) =135 hours / 15 credits
• Mentoring 154 weeks x 1 hour/week =154 hours
• PLTS = 60 hours
• ERR = 41 hours
Year 1=338 hours Year 2=338 hours Year 3=338 hours Year 4=170 hours

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 9: Electrical and Electronic Engineering

Pathway duration approximately 42 months depending on the qualification and unit options selected

Level 3 NVQ Extended Diploma in Electrical and Electronic Engineering (QCF)

Total minimum credit value: 186 credits
Total GLH = 1175 hours
• Competence = 425 minimum hours /117 minimum credits
• Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
• Knowledge = 54 minimum credits (based on the smallest technical certificate credit)
• Functional Skills (notional value 45 hours x 3) =135 hours / 15 credits
• Mentoring 154 weeks x 1 hour/week =154 hours
• PLTS = 60 hours
• ERR = 41 hours
Year 1=336 hours Year 2=336 hours Year 3=336 hours Year 4=167 hours

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 10: Installation and Commissioning

Pathway duration approximately 42 months depending on the qualification and unit options selected

Level 3 NVQ Extended Diploma in Installation and Commissioning (QCF)

Total minimum credit value: 240 credits
Total GLH = 1175 hours
• Competence = 425 minimum hours /176 minimum credits
• Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
• Knowledge = 49 minimum credits (based on the smallest technical certificate credit)
• Functional Skills (notional value 45 hours x 3) =135 hours / 15 credits
• Mentoring 154 weeks x 1 hour/week =154 hours
• PLTS = 60 hours
• ERR = 41 hours
Year 1=336 hours Year 2=336 hours Year 3=336 hours Year 4=167 hours

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 11: Engineering Tool-making

Pathway duration approximately 42 months depending on the qualification and unit options selected

Level 3 NVQ Extended Diploma in Engineering Tool-making (QCF)

Total minimum credit value: 201 credits
Total GLH = 1189 hours
• Competence = 439 minimum hours /132 minimum credits
• Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
• Knowledge = 54 minimum credits (based on the smallest technical certificate credit)
• Functional Skills (notional value 45 hours x 3) =135 hours / 15 credits
• Mentoring 154 weeks x 1 hour/week =154 hours
• PLTS = 60 hours
• ERR = 41 hours
Year 1=340 hours Year 2=340 hours Year 3=340 hours Year 4=169 hours

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 12: Automotive

Pathway duration approximately 42 months depending on the qualification and unit options Selected

Level 3 NVQ Extended Diploma in Automotive Engineering (QCF)

Total minimum credit value: 218 credits
Total GLH = 1182 hours
• Competence = 432 minimum hours /143 minimum credits
• Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
• Knowledge = 60 minimum credits (based on the smallest technical certificate credit)
• Functional Skills (notional value 45 hours x 3) =135 hours / 15 credits
• Mentoring 154 weeks x 1 hour/week =154 hours
• PLTS = 60 hours
• ERR = 41 hours
Year 1=338 hours Year 2=338 hours Year 3=338 hours Year 4=168 hours

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 13: Engineering Woodworking, Pattern and Model Making

Pathway duration approximately 42 months depending on the qualification and unit options selected

Level 3 NVQ Extended Diploma in Engineering Woodworking, Pattern and Model Making (QCF)

Total minimum credit value: 208 credits
Total GLH = 1182 hours
• Competence = 432 minimum hours /133 minimum credits
• Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
• Knowledge = 60 minimum credits (based on the smallest technical certificate credit)
• Functional Skills (notional value 45 hours x 3) =135 hours / 15 credits
• Mentoring 154 weeks x 1 hour/week =154 hours
• PLTS = 60 hours
• ERR = 41 hours
Year 1=338 hours Year 2=338 hours Year 3=338 hours Year 4=168 hours

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 14: Engineering Leadership

Pathway duration approximately 42 months depending on the qualification and unit options selected

Level 3 NVQ Extended Diploma in Engineering Leadership (QCF)

Total minimum credit value: 203 credits
Total GLH = 1180 hours
• Competence = 430 minimum hours /128 minimum credits
• Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
• Knowledge = 60 minimum credits (based on the smallest technical certificate credit)
• Functional Skills (notional value 45 hours x 3) =135 hours / 15 credits
• Mentoring 154 weeks x 1 hour/week =154 hours
• PLTS = 60 hours
• ERR = 41 hours
Year 1=337 hours Year 2=337 hours Year 3=337 hours Year 4=169 hours

Minimum off-the-job guided learning hours

Minimum off-the-job guided learning hours:

Below are the minimum off-the-job guided learning hours specified for all pathways of this level 3 programme

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 1: Aerospace

Minimum off-the-job hours through pathway 1 is 750 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 63% of the total pathway GLH.

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 2: Marine (Ship Building, maintenance and repair)

Minimum off-the-job hours through pathway 2 is 750 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 64% of the total pathway GLH.

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 3: Mechanical Manufacturing Engineering

Minimum off-the-job hours through pathway 3 is 750 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 63% of the total pathway GLH.

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 4: Marine (Yacht and Boat Building, maintenance and repair)

Minimum off-the-job hours through pathway 4 is 840 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 74% of the total pathway GLH

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 5: Engineering Maintenance

Minimum off-the-job hours through pathway 5 is 570 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS

and Mentoring.

This amounts to 57% of the total pathway GLH.

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 6: Fabrication and Welding

Minimum off-the-job hours through pathway 6 is 750 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 59% of the total pathway GLH.

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 7: Materials Processing & Finishing

Minimum off-the-job hours through pathway 7 is 750 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 64% of the total pathway GLH.

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 8: Engineering Technical Support

Minimum off-the-job hours through pathway 8 is 750 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 63% of the total pathway GLH.

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 9: Electrical and Electronic Engineering

Minimum off-the-job hours through pathway 9 is 750 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 64% of the total pathway GLH.

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 10: Installation and Commissioning

Minimum off-the-job hours through pathway 10 is 750 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 64% of the total pathway GLH.

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 11: Engineering Tool-making

Minimum off-the-job hours through pathway 11 is 750 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 63% of the total pathway GLH.

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 12: Automotive

Minimum off-the-job hours through pathway 12 is 750 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 64% of the total pathway GLH.

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 13: Engineering Woodworking, Pattern and Model Making

Minimum off-the-job hours through pathway 13 is 750 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 64% of the total pathway GLH.

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 14: Engineering Leadership

Minimum off-the-job hours through pathway 14 is 750 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 64% of the total pathway GLH.

How this requirement will be met

Apprentices following the pathways described within this framework will receive off-the-job learning via a combination of activities such as the Underpinning Knowledge (Technical certificate), Functional skills; Employment Responsibilities and Rights ERR; and Personal Learning and Thinking Skills (PLTS).

With the exception of those undertaking Pathway 4, Yacht, Boat Building, Maintenance and Repair where Advanced Apprentices have to complete the Level 3 NVQ Diploma in Marine Engineering, all other Advanced Apprentices must complete one of the Level 3 NVQ Extended Diploma's which include a number of Performing Engineering Operations (PEO) Level 2 NVQ units. These units should be delivered and assessed in a sheltered and realistic environment and must be achieved before apprentices complete the Level 3 units in the Extended Diploma on the job in the workplace.

It is recognised that in some instances in the past, the PEO NVQ Level 2 has been delivered on a part-time day-release basis in a sheltered environment with the employer delivering the NVQ Level 3 in parallel for the balance of time each week. There are clear disadvantages to this approach

a) The potential for trainees to work in hazardous environments commensurate with level 3 activities without having received the Health and Safety tuition at level 2 that would support this situation.

b) The potential for the learner not to be trained in a progressive way developing competences and knowledge at level 2 that progresses seamlessly to level 3.

If providers and employers wish to continue delivery on this basis, they must ensure that:

a) All appropriate Health and Safety units are successfully completed at Level 2 prior to any delivery at Level 3 in the workplace.

b) Any units at Level 3 delivered in the workplace must have been preceded by delivery at Level 2 in a sheltered environment.

The Technical Certificate may be delivered either by day or block release or a combination of the two at a local Training Provider or College of FE or delivered on the employers premises

(away from the immediate pressures of the workplace). There may also be a need for self study according to the Training Providers, Colleges or Awarding Organisations arrangements.

Both Functional and Key skills delivery methods may vary, however all methods should start with initial/early assessment of a learner's functional skills, personalised learning should be based on assessing performance to date in order to inform and shape the next step in learning for that individual or group of individuals. Both Functional and Key skills are externally assessed and candidates need to be prepared in order to take the tests, again methods of preparation vary but the preferred method seems to be an intensive off-the-job coaching period where candidates are taught the techniques required to undertake previous test papers to become proficient. In the case of Key skills this also provides an opportunity to examine their portfolios to ensure these are up to standard.

Employment Responsibilities and Rights (ERR) will be delivered as per the guidance in the ERR section of this framework. It is important that all new apprentices receive a comprehensive induction programme on joining their company and that they are aware of the evidence opportunities this presents to complete significant areas of the ERR requirements.

All three key elements will be delivered by a combination of group-based delivery and self-study. These in combination exceed the 100 GLH / 30% rule as defined in the SASE (19. Section 27-1 SASE). In addition there will be a company induction, group delivery of PLTS requirements (prior to each apprentice starting to record their PLTS) and its is recommended that a mentor should be appointed for each apprentice to review their progress on a regular weekly basis. All of these activities will take place off-the-job.

The Technical Certificate, Functional skills, and Employment Responsibilities and Rights will be formally delivered by the training provider/college staff in accordance with the awarding organisation's delivery and assessment guidance. This process is regulated and quality assured by Ofqual and Ofsted. PLTS will be delivered as described within its section.

Inclusion of Technical Certificates in the Apprenticeship Framework pathways

Working closely with a number of stakeholders including employers and awarding organisations we have ensured that employers and apprentices have access to a wide range of technical certificates across a number of awarding organisations.

Whilst Awarding Organisation partners have ensured that each of the technical knowledge qualifications in each pathway delivers, via a core and options approach the minimum knowledge and understanding requirements for all the occupational areas (job roles) selected in the appropriate NVQ, employers have also demanded that they and apprentices have access to a number of different technical knowledge qualifications that specify varying degrees of

theoretical concepts required in Engineering, Manufacturing and Advanced Technology Sectors including maths, scientific and engineering/manufacturing principles.

The different sizes (credit value and GLH) of the technical knowledge qualifications reflects the varying degree in the complexity, breadth and depth of the skills, knowledge, understanding and theoretical concepts required in the Engineering, Manufacturing and Advanced Technology Sectors.

The benefits of this approach for both the employer and apprentices is that they can select the most appropriate qualification that meets the business requirements but also recognises the potential progressions opportunities both in company including access to further and higher education and the career aspirations and abilities of the apprentice.

The Providers of the technical knowledge qualification in partnership with the apprentice and employer could take the following into account and/or undertake further diagnostic assessments to ensure that the apprentice is enrolled on the most appropriate technical qualification:

- The career aspirations of the Apprentice
- The skill and knowledge requirements of the employer for the selected Occupational area (job role). The employer may have recruited the apprentice based on a workforce planning tool including succession planning
- An assessment of the academic qualifications achieved by the apprentice prior to undertaking the Apprenticeship to determine if the apprentice will have the ability to achieve one of the more academically demanding technical knowledge qualifications
- The results of any psychometric tests that would ascertain whether the apprentice will be able to achieve one of the more academically demanding technical knowledge qualifications
- The preferred learning style of the apprentice including the various assessment methodologies used by the different Awarding Organisations
- Custom and practice within the Sector, including any legislation requirements
- Local and/or National Trade Union agreements

Minimum on-the-job guided learning hours

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 1: Aerospace

Minimum on-the-job through pathway 1 is 441 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Aeronautical Engineering (QCF)

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 2: Marine (Ship Building, maintenance and repair)

Minimum on-the-job through pathway 2 is 424 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Marine Engineering (QCF)

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 3: Mechanical Manufacturing Engineering

Minimum on-the-job through pathway 3 is 439 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Mechanical Manufacturing Engineering (QCF)

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 4: Marine (Yacht and Boat Building, maintenance and repair)

Minimum on-the-job through pathway 4 is 301 GLH and is evidenced by completion of the Level 3 NVQ Diploma in Marine Engineering (QCF)

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 5: Engineering Maintenance

Minimum on-the-job through pathway 5 is 426 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Engineering Maintenance (QCF)

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 6: Fabrication and Welding

Minimum on-the-job through pathway 6 is 516 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Fabrication and Welding (QCF)

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 7: Materials Processing & Finishing

Minimum on-the-job through pathway 7 is 432 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma Materials Processing & Finishing (QCF)

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 8: Engineering Technical Support

Minimum on-the-job through pathway 8 is 434 GLH and is evidenced by completion of the

Level 3 NVQ Extended Diploma in Engineering Technical Support (QCF)

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 9: Electrical and Electronic Engineering

Minimum on-the-job through pathway 9 is 425 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Electrical and Electronic Engineering (QCF)

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 10: Installation and Commissioning

Minimum on-the-job through pathway 10 is 425 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Installation and Commissioning (QCF)

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 11: Engineering Tool-making

Minimum on-the-job through pathway 11 is 439 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Engineering Tool-making (QCF)

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 12: Automotive

Minimum on-the-job through pathway 12 is 432 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Automotive Engineering (QCF)

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 13: Engineering Woodworking, Pattern and Model Making

Minimum on-the-job through pathway 13 is 432 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Engineering Woodworking, Pattern and Model Making (QCF)

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 14: Engineering Leadership

Minimum on-the-job through pathway 14 is 430 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Engineering Leadership (QCF)

How this requirement will be met

The Level 3 Extended NVQ Diploma's and Level 3 NVQ Diploma included in this Advanced Apprenticeship must be delivered in accordance with the relevant Awarding Organisations delivery and assessment guidance, which includes the requirements set out in Semta's QCF NVQ Unit Assessment Strategies.

The QCF NVQ Unit Assessment Strategies for Engineering and Performing Engineering Operations can be downloaded from Semta's website using the following URL.

www.semta.org.uk/training_providers__awarding/national_occupational_standard/qca_assessment_requirements.aspx

Advanced Apprentices must complete one of the Level 3 NVQ Extended Diploma's (except in the case of Pathway 4). However if the relevant QCF PEO units have already been achieved and certificated in a previous programme such as applicants who have completed the Improving Operational Performance Level 2 framework (Performing Engineering Operations Level 2 pathway) then they will be able to accredit these against the requirements of the Extended Level 3 Diploma. In such circumstances this would result in the minimum GLH requirements for the relevant pathway being reduced by a minimum of 123 hours and a minimum value of 27 credits (depending on the PEO units completed).

The Level 3 Extended NVQ Diploma's include a number of Performing Engineering Operations (PEO) Level 2 NVQ units. It is strongly recommended that the PEO units are delivered and assessed off the job in a sheltered and realistic work environment. This will ensure that Advanced Apprentices have attained a minimum and safe level of skills, knowledge and understanding in the occupational area prior to entering the workplace, thus minimising the risk of injury to themselves and other employees and the potential of increased costs incurred by the employer such as damaged tools/equipment, scrapped materials and components.
.
In order to ensure the safe transition to the workplace prior to being exposed to the hazards of the industrial environment, Advanced Apprentices must receive sufficient Health and Safety training covering both general and occupational specific requirements whilst undertaking the selected Level 2 NVQ PEO units off the job and in a sheltered and realistic work environment.

As a minimum the training programme should include the skills, knowledge and understanding requirements set out in the Performing Engineering Operations Level 2 QCF Current QCF Unit reference number L/600/6781.

Whilst undertaking the skill specific Level 2 QCF NVQ units as part of the Level 3 NVQ Extended Diploma, Training Providers may wish to consider registering Advanced Apprentices on the three Mandatory Units from the Level 2 NVQ Diploma in Performing Engineering Operations (QCF)

Unit 1: Working Safely in an Engineering Environment. QCF Unit Ref; L/600/5781
Unit 2: Carrying out Engineering Activities Efficiently and Effectively. QCF Unit Ref; D/600/5784
Unit 3: Using and Communicating Technical Information. QCF Unit Ref; M/600/5790

This has the advantage that if for any reason the apprentice is not able to complete the Level 3 NVQ Extended Diploma they would have achieved sufficient units to claim the Level 2 NVQ Diploma in Performing Engineering Operations (QCF)

All apprentices are required to generate evidence in the workplace to demonstrate completion of the competence qualification, this may be through:

Apprentices generating a portfolio to record evidence of unit completion in accordance with the Awarding Organisations requirements and this will be regularly reviewed by the assessor and mentor. A period of one hour per week has been set aside for mentors to review the ongoing progress of their apprentice.

or

Apprentices generating portfolio evidence based on jobs undertaken will need to get this signed as having been completed by a responsible work colleague. This is then examined and agreed by the assessor as a contribution to demonstrating competence in the workplace.

Generation of portfolio evidence may be paper based, electronic with other mediums such as video evidence. Evidence may be gathered throughout the whole apprenticeship period

It is also important that:

- Progress towards completion of the competence qualification should be planned, reviewed and evaluated jointly between the apprentice and an appointed mentor or manager.

- Apprentices should receive regular reviews from the mentor and assessor in order to ensure they remain on target to complete the competence qualification in the allocated time.

- Be delivered during normal contracted working hours

Examples of on-the-job guided learning in an engineering manufacturing context might be:

- Environmental awareness
- Employability skills

- Team working and communications
- Task specific workplace instructions or team briefings
- Taught sessions by the workplace line manager/instructor
- Induction where activities are covered within normal work duties
- Coaching of learners.

Personal learning and thinking skills assessment and recognition (England)

Summary of Personal Learning and Thinking Skills

Personal Learning and Thinking Skills (PLTS) comprise of six skill areas that are essential to being successful in an apprenticeship. There are two methods of evidencing the completion of PLTS within this framework.

Method 1

Emta Awards Limited (EAL) have produced a stand-alone qualification that covers all 6 skill areas of PLTS.

The qualification is detailed below:

EAL Level 2 Award in Personal Learning and Thinking Skills for New Entrants into the Science, Engineering and Manufacturing Sectors (QCF)
QCF qualification ref no: 600/2019/2
Credit value: 6 credits
Guided learning hours: 60

Method 2

Apprentices or training providers may download the Semta PLTS Evidence Recording Document available from the Semta website

www.semta.org.uk/docs/PLTS%20Evidence%20Recording%20Document%20100511.doc

This document will be used to record the apprentices PLTS evidence from the most naturally occurring location, such as the knowledge or competency qualifications, or Functional/Key skills and ERR components of the framework.

To claim final certification of the apprenticeship, one of the following forms of PLTS completion evidence will be required:

A qualification certificate for the EAL Level 2 Award in Personal Learning and Thinking Skills for New Entrants into the Science, Engineering and Manufacturing Sectors (QCF)

or

A completed and countersigned Semta PLTS evidence recording document.

All apprentices will need to receive guidance on what PLTS are and how they will need to provide evidence for all 6 PLTS areas as detailed below. They will need to understand those aspects of each skill area as defined in the bullet points below and be able to identify opportunities to practice and evidence these skills within their apprenticeship.

The PLTS areas are interconnected so it is likely that apprentices will encounter skills from several areas in any one learning experience. For example, when an apprentice works to improve their own and team practice in the workplace they will have demonstrated team worker (collaborate with others to work towards common goals), effective participator (identify improvements that would benefit others as well as themselves) and self manager skills (work towards goals, showing initiative, commitment and perseverance).

Lecturers and/or assessors will be expected to check individual apprentices' progress in using and recording PLTS.

Creative thinking

Creative thinking
For Creative Thinking there is a focus statement summing up the range of skills to be mastered and this is accompanied by a set of outcome statements that are indicative of the skills, behaviours and personal qualities associated with creative thinking.

Creative Thinking involves:
- generating ideas and exploring possibilities
- asking questions to extend thinking
- connecting own and others' ideas and experiences in inventive ways
- questioning own and others' assumptions
- trying out alternatives or new solutions and following ideas through
- adapting ideas as circumstances change

Independent enquiry

For Independent Enquiry there is a focus statement summing up the range of skills to be mastered and this is accompanied by a set of outcome statements that are indicative of the skills, behaviours and personal qualities associated with independent enquiry.

Independent Enquiry involves:

- identifying questions to answer and problems to resolve
- planning and carrying out research, appreciating the consequences of decisions
- exploring issues, events or problems from different perspectives
- analysing and evaluating information, judging its relevance and value
- considering the influence of circumstances, beliefs and feelings on decisions and events

Reflective learning

For Reflective Learning there is a focus statement summing up the range of skills to be mastered and this is accompanied by a set of outcome statements that are indicative of the skills, behaviours and personal qualities associated with independent enquiry.

Reflective Learning involves:

- assessing yourself and others, identifying opportunities and achievements
- setting goals with success criteria for your personal development and work
- reviewing progress, acting on the outcomes
- inviting feedback and dealing positively with praise, setbacks and criticism
- evaluating experiences and learning to inform your future progress
- communicating your learning in relevant ways for different audiences

Team working

For Team Working there is a focus statement summing up the range of skills to be mastered and this is accompanied by a set of outcome statements that are indicative of the skills, behaviours and personal qualities associated with team working.

Team Working involves:

- collaborating with others to work towards common goals
- reaching agreements, managing discussions to achieve results
- adapting behaviour to suit different roles and situations, including leadership roles
- showing fairness and consideration to others

- taking responsibility, showing confidence in yourself and your contribution
- providing constructive support and feedback to others

Self management

For Self Managers there is a focus statement summing up the range of skills to be mastered and this is accompanied by a set of outcome statements that are indicative of the skills, behaviours and personal qualities associated with self management.

Self Manager involves:

- seeking out challenges or new responsibilities and showing flexibility when priorities change
- working towards goals, showing initiative, commitment and perseverance
- organising time and resources, prioritising actions
- anticipating, taking and managing risks
- dealing with competing pressures, including personal and work-related demands
- responding positively to change, seeking advice and support when needed
- managing your emotions and building and maintaining relationships

Effective participation

For Effective Participation there is a focus statement summing up the range of skills to be mastered and this is accompanied by a set of outcome statements that are indicative of the skills, behaviours and personal qualities associated with effective participation, skills, behaviours and personal qualities associated with effective participation.

Effective Participation involves:

- discussing issues of concern, seeking resolution where needed
- presenting a persuasive case for action
- proposing practical ways forward, breaking these down into manageable steps
- identifying improvements that would benefit others as well yourself
- trying to influence others, negotiating and balancing diverse views to reach workable solutions
- acting as an advocate for views and beliefs that may differ from your own

Additional employer requirements

There are no additional employer requirements.

apprenticeship
FRAMEWORKS ONLINE

For more information visit
www.apprenticeshipframeworksonline.semta.org.uk