

apprenticeship FRAMEWORK

Engineering Manufacture (Operator and Semi-skilled)

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Engineering Manufacture (Operator and Semi-skilled)

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Short description

The Engineering Manufacture framework at Level 2 is designed to provide the skills knowledge and competence requirements for intermediate apprentices to operate at semi-skilled skilled or qualified operator status carrying out a range of engineering and manufacturing processes within the following engineering sub-sectors; Automotive; Aerospace; Mechanical; Marine (Ship, Yacht, Boat building, maintenance and repair); Fabrication and Welding; Materials Processing and Finishing and Engineering Technical Support.

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Revising a framework

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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 technical certificate qualifications that have been requested.

Summary of changes made to this framework

Summary of changes:

- Framework title revised
- 2 Job roles clarified
- Variation in technical certificate sizes explained
- additional required technical certificates added

Qualifications removed

None

Qualifications added

Pathway 1

City & Guilds Level 2 Certificate In Aircraft Maintenance (Military Aircraft) (QCF) 600/1969/4

Pathway 2

EAL Level 2 Diploma in Engineering Technology (QCF) 500/7595/0

Pathway 4

EAL Level 2 Certificate in Cycle Maintenance (QCF) 501/0934/0

City & Guilds Level 2 Certificate In Aircraft Maintenance (Military Aircraft) (QCF) 600/1969/4

Pathway 5

City & Guilds Level 2 Certificate in Marine Construction, Systems Engineering and Maintenance (QCF) 600/2304/1

Pathway 6

EAL Level 2 Diploma in Engineering Technology (QCF) 500/7595/0

Qualifications that have been extended

None

Purpose of this framework

Summary of the purpose of the framework

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

The "leading-edge" sectors include:

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

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.

Occupation

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), craftsperson (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.

Operator/semi-skilled occupations

Employment

- 162,000 operators are employed in technical roles in the engineering sectors in England.

Key occupations

- The main sub-occupations within the operator category include metal working machine operatives, assemblers, inspectors and testers and plant and machine operatives,

Demographic profile for engineering operators/semi-skilled:

- 96% in full time employment
- 24% Female
- 9% between 16 to 24 yrs of age
- 8% age 60yrs +
- 15% have a disability
- 9% ethnicity non-white
- Operators as a proportion of total employment 25%

Current skills and qualifications:

- 61% of operators within the engineering sectors in England were qualified to NVQ Level 2 or higher.

Vacancies:

- It is estimated that in there were 2,700 operator vacancies across the engineering sector in England in 2009.
- 290 operator vacancies were hard-to-fill.

Skills needs and gaps

- 6% of engineering establishments in England had skills gaps for operators.
- 10% of operators within engineering establishments in England had skills gaps.

Future skills demand

- 17,900 operators (2,600 per annum) are required into the engineering sectors in England

over the period 2010- 2016 .

- 9,000 of these operators will need qualifications at NVQ Level 2 or higher.

The Engineering Manufacture (Operator and Semi-skilled) Intermediate framework has been developed to address critical skills gaps and shortages as detailed above and contains seven pathways:

- Pathway 1 Aerospace
- Pathway 2 Marine (Ship, Yacht, Boat building, maintenance and repair)
- Pathway 3 Mechanical Manufacturing Engineering
- Pathway 4 Engineering Maintenance and Installation
- Pathway 5 Fabrication and Welding
- Pathway 6 Materials Processing and Finishing
- Pathway 7 Engineering Technical Support

These are key to addressing the skills needs and gaps highlighted. The framework in its old NQF format has a proven track record, with a consistent 8,000 apprentice starts per year. The new QCF format will allow greater tailoring of qualifications to meet employers skills needs, so higher take-up levels are anticipated.

Aims and objectives of this framework (England)

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

Further aims and objectives:

- Provide greater unit flexibility in qualification 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 Intermediate 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

This Level 2 Framework offers a broad range of occupations via 7 pathways. Employers would welcome applicants from a wide and diverse background.

Employers would be interested in applicants that:

- 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 completed a Young Apprenticeship in Engineering or other related area
- Have GCSEs in English, Maths and Science
- Have completed tests in basic numeracy, literacy and communication skills and have spatial awareness

As a guide, the Engineering Manufacturing framework is suitable for applicants who have five GCSEs grades D to E in English, Maths and Science. The selection process on behalf of employers may include initial assessment where applicants will be asked if they have any qualifications or experience that can be accredited against the requirements of the apprenticeship. They may also be required to take tests in basic numeracy and literacy, communications skills and spatial awareness. There may also be an interview to ensure applicants have selected the right occupational sector and are motivated to become an apprentice, as undertaking an apprenticeship is a major commitment for both the individual and the employer.

To avoid the need to repeat qualifications, processes exist to ensure applicants with prior knowledge, qualifications and/or experience are not disadvantaged. Colleges, Training Providers and Awarding Organisations will be able to advise applicants on the current rules for accrediting prior learning and experience.

An Intermediate apprenticeship framework must specify that an apprentice needs to achieve (or have achieved) Functional skills, GCSEs (with enhanced functional content) or Key skills,

these are listed together with the required levels under the Transferable skills section of this framework.

Knowledge qualifications:

If applicants already have one of the Intermediate (Level 2) knowledge qualifications (see knowledge qualifications section of this framework) they can count this and do not have to repeat the qualification providing they achieved this qualification within 5 years of starting the apprenticeship. The hours they spent achieving this qualification will also count in their overall 'off-the-job' framework hours.

Competence qualifications:

If applicants already have one of the competence qualifications at Level 2 (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. 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 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 2

Title for this framework at level 2

Intermediate Apprenticeship in Engineering Manufacture

Pathways for this framework at level 2

- Pathway 1: Aerospace
- Pathway 2: Marine (Ship, Yacht, Boat building, maintenance and repair)
- Pathway 3: Mechanical Manufacturing Engineering
- Pathway 4: Engineering Maintenance and Installation
- Pathway 5: Fabrication and Welding
- Pathway 6: Materials Processing and Finishing
- Pathway 7: Engineering Technical Support

Level 2, Pathway 1: Aerospace

Description of this pathway

Aerospace (Semi skilled and Operator) total minimum credit value = 84 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)
Semi-skilled fitter (aircraft assembly)	Riveting; bolting and use of special fasteners to assemble aircraft components
Aerospace component assembly fitter	Assemble aerospace component assemblies to required tolerances and finishes
Semi-Skilled Electrical Loomers/PCB Assembly	Use the following process's to produce wiring looms, crimping, braiding, terminating and soldering. They also reading drawings and layouts to assemble circuits
Survival equipment maintenance mechanic	Ensures onboard aircraft survival equipment is maintained and remains fully functional
Aero engine (strip and wash) mechanic	Disassemble aero engines and components for cleaning and inspection
Semi-skilled aircraft maintenance fitter	Carry out scheduled maintenance under supervision of aircraft systems: mechanical; electrical; avionic; electronic; optical; pneumatic; hydraulic; engines; weapons or survival equipment to military and CAA quality requirements

Qualifications

Competence qualifications available to this pathway

C1 - Level 2 NVQ Diploma in Aeronautical Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1074/5	City & Guilds	47	215	N/A
C1b	600/1028/9	EAL	47	215	N/A
C1c	501/2303/8	Edexcel	47	215	N/A

Knowledge qualifications available to this pathway

K1 - Edexcel BTEC Level 2 Extended Certificate in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	500/7577/9	Edexcel	30	180	N/A

K2 - Edexcel BTEC Level 2 Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7576/7	Edexcel	60	360	N/A

Knowledge qualifications available to this pathway(cont.)

K3 - City & Guilds Level 2 Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	600/0881/7	City & Guilds	42	360	N/A

K4 - City & Guilds Level 2 Diploma in Aircraft Maintenance (Civil Aircraft) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	600/1928/1	City & Guilds	56	485	N/A

K5 - EAL Level 2 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/7595/0	EAL	39	330	N/A

K6 - City & Guilds Level 2 Certificate In Aircraft Maintenance (Military Aircraft) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	600/1969/4	City & Guilds	22	180	N/A

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K6a provides the underpinning knowledge for C1a, C1b & C1c

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications support key areas of technical knowledge development needed for apprentices in engineering and manufacturing industries to carry out their duties in a safe and efficient manner.

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	1	5
GCSE qualification in English (with enhanced functional content)	E	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	1	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	1	5
GCSE qualification (with enhanced functional content) in Mathematics	E	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or...*	1	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)	1	5
GCSE qualification in ICT (with enhanced functional content)	E	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or... *	1	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 Functional skills requirements

Progression routes into and from this pathway

Progression routes into this pathway:

Entrants to this pathway are expected to be primarily school leavers who have completed their GCSE studies and in some cases relevant vocational activity such as a Diploma in engineering, Young Apprenticeship or extended work experience.

Other entrants may have experience from working in the sector in an engineering or manufacturing context, and are now seeking to become qualified by undertaking an apprenticeship programme.

Progression routes from this pathway:

It is likely that a significant number of Intermediate Apprentices will progress on completion of this pathway to the Advanced Apprenticeship in Engineering Manufacture at level 3. More

generally, most ex-apprentices aspire to a combination of internal promotion within the company to team leader or supervisor level, while at the same time taking Further Education qualifications to augment their knowledge. For more information on engineering progression routes we recommend you visit the careers page and progression map at the semta website hot-linked below.

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

and the progression map

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

Delivery and assessment of employee rights and responsibilities

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

Ema 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 2, Pathway 2: Marine (Ship, Yacht, Boat building, maintenance and repair)

Description of this pathway

Marine (Ship, Yacht, Boat building, maintenance and repair) (Semi skilled and Operator) total minimum credit value = 98 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)
Marine Fabricator/Welder (semi-skilled)	Fabrication and welding of thick plate for ship modules / sub-assemblies under supervision
Marine Electrical Fitter (semi-skilled)	Assist skilled personnel with the installation and maintenance of electrical equipment and associated systems
Marine Engine Fitter	Assist the marine engine fitter to install and maintain large marine propulsion systems
Marine Mechanical Fitter	Assist skilled fitter with the mechanical installation and assembly of marine mechanical equipment
Marine CNC Machinist (semi skilled)	Operation of machine tools both CNC and manual to produce or repair marine equipment
Boat Builder/Shipwright	Produce boats by assembly and installation of interiors and associated furniture/ structural components of bespoke design or from pre cut kits.
Sailmaker	Manufacture of sails Natural and synthetic materials. Manufacture of covers, spray hoods and dodgers.
Boat Mover/Yard Hand	Lifting and moving boats ashore. Locate and store boats in dry stack, cradles and patent shoring systems. Launch boats, manoeuvre and secure to pontoons, buoys, moorings. Cleaning hulls.
Marine Installation engineer - (semi-skilled)	Installation and servicing of engine, fuel systems, propulsion systems, generators , welding and fabrication, machining, hydraulics, pipefitting and take part in sea trials
Marine Painter	Assists in the spraying/applying of 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	Assists with Mast stepping, Rigging, Splicing, working aloft, guard wires, wireless boat moving
Marine Fitting out carpenter	Assist in the installation of wood and fibreglass marine furniture, fittings, linings, units and other associated work (including laminating bulkheads) as part of total boat construction
Shipwright	Uses GRP and composites, Gelcoats repairs, moulds, hull repairs, stern tubes/line ups. teak decks, bow thrusters, deck fitting

Qualifications

Competence qualifications available to this pathway

C1 - Level 2 NVQ Diploma in Marine Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1031/9	EAL	59	215	N/A
C1b	600/0509/9	Edexcel	59	215	N/A

Knowledge qualifications available to this pathway

K1 - Edexcel BTEC Level 2 Extended Certificate in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	500/7577/9	Edexcel	30	180	N/A

K2 - Edexcel BTEC Level 2 Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7576/7	Edexcel	60	360	N/A

K3 - City & Guilds Level 2 Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	600/0881/7	City & Guilds	42	360	N/A

Knowledge qualifications available to this pathway(cont.)

K4 - ABC Level 2 Certificate in Fabrication and Welding Practice (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/6214/1	ABC	24	240	N/A

K5 - City & Guilds Level 2 Certificate in Marine Construction, Systems Engineering and Maintenance (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	600/2304/1	City & Guilds	32	280	N/A

K6 - EAL Level 2 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	500/7595/0	EAL	39	330	N/A

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K6a provide the underpinning knowledge for C1a & C1b

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications support key areas of technical knowledge development needed for apprentices in engineering and manufacturing industries to carry out their duties in a safe and efficient manner.

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	1	5
GCSE qualification in English (with enhanced functional content)	E	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	1	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	1	5
GCSE qualification (with enhanced functional content) in Mathematics	E	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or...*	1	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)	1	5
GCSE qualification in ICT (with enhanced functional content)	E	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or... *	1	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 Functional skills requirements

Progression routes into and from this pathway

Progression routes into this pathway:

Entrants to this pathway are expected to be primarily school leavers who have completed their GCSE studies and in some cases relevant vocational activity such as a Diploma in engineering, Young Apprenticeship or extended work experience.

Other entrants may have experience from working in the sector in an engineering or manufacturing context, and are now seeking to become qualified by undertaking an apprenticeship programme.

Progression routes from this pathway:

It is likely that a significant number of Intermediate Apprentices will progress on completion of this pathway to the Advanced Apprenticeship in Engineering Manufacture at level 3. More

generally, most ex-apprentices aspire to a combination of internal promotion within the company to team leader or supervisor level, while at the same time taking Further Education qualifications to augment their knowledge. For more information on engineering progression routes we recommend you visit the careers page and progression map at the semta website hot-linked below.

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

and the progression map

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

Delivery and assessment of employee rights and responsibilities

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

Ema 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 2, Pathway 3: Mechanical Manufacturing Engineering

Description of this pathway

Mechanical Manufacturing Engineering (Semi skilled and Operator) total minimum credit value = 99 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)
Machine Operator	Basic machine operator for batch production activity, material preparation, operate a variety of machines to turn; drill; bore; grind; cut and mill to shape metal workpieces to specification
Machine Tool Fitter (semi-skilled)	Alignment of Linear rails and ball screws; Grinding, scraping and other adjustment techniques, Pneumatic and hydraulic pipe work working to assembly drawings
Jig and tool fitter (semi skilled)	Assemble and repair machine and press tools, dies, jigs, fixtures and other tools
Moulder/Coremaker (semi-skilled)	Work in foundries where metal is melted and cast into parts such as metal components for industrial machinery, turbines, and other industrial equipment
Mechanical fitter (semi-skilled)	Assembly (under supervision) of mechanical equipment and related systems to required specifications
Semi skilled sheet metal worker	Fabricate, install, and repair ventilating, heating, and air-conditioning systems; and a wide variety of other sheets fabricated equipment.
CNC Operator	Operating CNC machinery such as lathes, milling machines and grinders. Setting up datum's, offsets, tooling. Inspecting and keeping tolerances in high volume production

Qualifications

Competence qualifications available to this pathway

C1 - Level 2 NVQ Diploma in Mechanical Manufacturing Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	501/1802/X	City & Guilds	54	215	N/A
C1b	500/9851/2	EAL	54	215	N/A
C1c	501/0739/2	Edexcel	54	215	N/A

Knowledge qualifications available to this pathway

K1 - Edexcel BTEC Level 2 Extended Certificate in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	500/7577/9	Edexcel	30	180	N/A

K2 - Edexcel BTEC Level 2 Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7576/7	Edexcel	60	360	N/A

Knowledge qualifications available to this pathway(cont.)

K3 - City & Guilds Level 2 Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	600/0881/7	City & Guilds	42	360	N/A

K4 - EAL Level 2 Diploma in Mechanical Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	501/0979/0	EAL	39	330	N/A

K5 - EAL Level 2 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/7595/0	EAL	39	330	N/A

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K5a provide the underpinning knowledge for C1a, C1b & C1c

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications support key areas of technical knowledge development needed for apprentices in engineering and manufacturing industries to carry out their duties in a safe and efficient manner.

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	1	5
GCSE qualification in English (with enhanced functional content)	E	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	1	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	1	5
GCSE qualification (with enhanced functional content) in Mathematics	E	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or...*	1	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)	1	5
GCSE qualification in ICT (with enhanced functional content)	E	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or... *	1	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 Functional skills requirements

Progression routes into and from this pathway

Progression routes into this pathway:

Entrants to this pathway are expected to be primarily school leavers who have completed their GCSE studies and in some cases relevant vocational activity such as a Diploma in engineering, Young Apprenticeship or extended work experience.

Other entrants may have experience from working in the sector in an engineering or manufacturing context, and are now seeking to become qualified by undertaking an apprenticeship programme.

Progression routes from this pathway:

It is likely that a significant number of Intermediate Apprentices will progress on completion of this pathway to the Advanced Apprenticeship in Engineering Manufacture at level 3. More

generally, most ex-apprentices aspire to a combination of internal promotion within the company to team leader or supervisor level, while at the same time taking Further Education qualifications to augment their knowledge. For more information on engineering progression routes we recommend you visit the careers page and progression map at the semta website hot-linked below.

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

and the progression map

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

Delivery and assessment of employee rights and responsibilities

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

Ema 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 2, Pathway 4: Engineering Maintenance and Installation

Description of this pathway

Engineering Maintenance and Installation (Semi skilled and Operator) total minimum credit value = 100 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 Fitter	Carry out preventative maintenance activities on mechanical equipment, deal with breakdowns, restoring components and systems to serviceable condition by repair and replacement
Electronics Maintenance Fitter	Carry out routine maintenance, fault location and testing on electronic equipment and circuits, repair and replace as necessary to restore serviceability
Lift Maintenance (semi-skilled)	Carry out routine maintenance and minor repairs on all types and manufactures of lift and stair lift equipment. Assist skilled personnel on major overhaul and service issues
Electrical Maintenance Fitter	Maintain under supervision, a wide variety electrical equipment including electric motors; generators; power distribution systems; lighting; heating and ventilating systems, carrying out planned preventative maintenance and dealing with daily reactive breakdowns
Military Armourer	Maintenance and repair of military weapons
Marine Maintenance Fitter	Undertake preventative and corrective maintenance of mechanical, electrical systems to include gas turbines, diesel engines, propulsion, power generation and distribution.

Qualifications

Competence qualifications available to this pathway

C1 - Level 2 NVQ Diploma in Engineering Maintenance and installation (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	501/0377/5	City & Guilds	63	239	N/A
C1b	501/0147/X	EAL	63	239	N/A
C1c	501/0621/1	Edexcel	63	239	N/A

Knowledge qualifications available to this pathway

K1 - Edexcel BTEC Level 2 Extended Certificate in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	500/7577/9	Edexcel	30	180	N/A

K2 - Edexcel BTEC Level 2 Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7576/7	Edexcel	60	360	N/A

Knowledge qualifications available to this pathway(cont.)

K3 - City & Guilds Level 2 Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	600/0881/7	City & Guilds	42	360	N/A

K4 - EAL Level 2 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/7595/0	EAL	39	330	N/A

K5 - EAL Level 2 Diploma in Pipework Systems Mechanical Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	501/1057/3	EAL	39	330	N/A

K6 - EAL Level 2 Certificate in Engineering Maintenance on Military Vehicles and Equipment (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	600/2116/0	EAL	23	200	N/A

K7 - City & Guilds Level 2 Certificate in Marine Construction, Systems Engineering and Maintenance					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value

K7a	600/2304/1	City & Guilds	32	280	N/A
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Knowledge qualifications available to this pathway(cont.)

K8 - EAL Level 2 Diploma in Maintenance Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	501/1059/7	EAL	39	330	N/A

K9 - EAL Level 2 Certificate in Cycle Maintenance (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	501/0934/0	EAL	25	150	N/A

K10 - City & Guilds Level 2 Certificate In Aircraft Maintenance (Military Aircraft) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	600/1969/4	City & Guilds	22	180	N/A

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K10a provide the underpinning knowledge for C1a, C1b & C1c

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications support key areas of technical knowledge development needed for apprentices in engineering and manufacturing industries to carry out their duties in a safe and efficient manner.

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	1	5
GCSE qualification in English (with enhanced functional content)	E	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	1	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	1	5
GCSE qualification (with enhanced functional content) in Mathematics	E	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or...*	1	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)	1	5
GCSE qualification in ICT (with enhanced functional content)	E	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or... *	1	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 Functional skills requirements

Progression routes into and from this pathway

Progression routes into this pathway:

Entrants to this pathway are expected to be primarily school leavers who have completed their GCSE studies and in some cases relevant vocational activity such as a Diploma in engineering, Young Apprenticeship or extended work experience.

Other entrants may have experience from working in the sector in an engineering or manufacturing context, and are now seeking to become qualified by undertaking an apprenticeship programme.

Progression routes from this pathway:

It is likely that a significant number of Intermediate Apprentices will progress on completion of this pathway to the Advanced Apprenticeship in Engineering Manufacture at level 3. More

generally, most ex-apprentices aspire to a combination of internal promotion within the company to team leader or supervisor level, while at the same time taking Further Education qualifications to augment their knowledge. For more information on engineering progression routes we recommend you visit the careers page and progression map at the semta website hot-linked below.

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

and the progression map

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

Delivery and assessment of employee rights and responsibilities

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

Ema 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 2, Pathway 5: Fabrication and Welding

Description of this pathway

Fabrication and Welding (Semi skilled and Operator) total minimum credit value = 85 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)
Fitter Welder	Fabricate and assemble metal parts by MIG; TIG; Argon Arc welding, brazing and soldering
Pipe Fitter	Measure and cut required piping using hand or machine tools, install and fit piping into position, join sections, test and repair
Semi skilled sheet metal worker	Working with metals up to 3mm thick working from drawings to mark out shapes on the metal before cutting out, shaping and joining materials using thermal cutting and TIG;MIG and Argon Arc joining techniques
Welder / Fabricator (thick plate semi-skilled)	Working with metals more than 3 mm thick, using engineering drawings, jigs and templates, cut and shape materials using manual or automated processes including thermal cutting TIG; MIG and Argon Arc welding methods

Qualifications

Competence qualifications available to this pathway

C1 - Level 2 NVQ Diploma in Fabrication and Welding Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	501/1278/8	EAL	47	214	N/A
C1b	600/2095/7	City & Guilds	47	214	N/A
C1c	501/1318/5	Edexcel	47	214	N/A

Knowledge qualifications available to this pathway

K1 - Edexcel BTEC Level 2 Extended Certificate in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	500/7577/9	Edexcel	30	180	N/A

K2 - Edexcel BTEC Level 2 Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7576/7	Edexcel	60	360	N/A

Knowledge qualifications available to this pathway(cont.)

K3 - City & Guilds Level 2 Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	600/0881/7	City & Guilds	42	360	N/A

K4 - ABC Level 2 Certificate in Fabrication and Welding Practice (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/6214/1	ABC	24	240	N/A

K5 - EAL Level 2 Diploma in Fabrication and Welding Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	501/1058/5	EAL	39	330	N/A

K6 - EAL Level 2 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	500/7595/0	EAL	39	330	N/A

K7 - EAL Level 2 Diploma in Pipework Systems Mechanical Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	501/1057/3	EAL	39	330	N/A

Knowledge qualifications available to this pathway(cont.)

K8 - EAL Level 2 Certificate in Positional Welding (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	501/1807/9	EAL	23	170	N/A

K9 - City & Guilds Level 2 Certificate in Marine Construction, Systems Engineering and Maintenance (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	600/2304/1	City & Guilds	32	280	N/A

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K9a provide the underpinning knowledge for C1a, C1b & C1c

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications support key areas of technical knowledge development needed for apprentices in engineering and manufacturing industries to carry out their duties in a safe and efficient manner.

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	1	5
GCSE qualification in English (with enhanced functional content)	E	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	1	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	1	5
GCSE qualification (with enhanced functional content) in Mathematics	E	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or...*	1	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)	1	5
GCSE qualification in ICT (with enhanced functional content)	E	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or... *	1	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 Functional skills requirements

Progression routes into and from this pathway

Progression routes into this pathway:

Entrants to this pathway are expected to be primarily school leavers who have completed their GCSE studies and in some cases relevant vocational activity such as a Diploma in engineering, Young Apprenticeship or extended work experience.

Other entrants may have experience from working in the sector in an engineering or manufacturing context, and are now seeking to become qualified by undertaking an apprenticeship programme.

Progression routes from this pathway:

It is likely that a significant number of Intermediate Apprentices will progress on completion of this pathway to the Advanced Apprenticeship in Engineering Manufacture at level 3. More

generally, most ex-apprentices aspire to a combination of internal promotion within the company to team leader or supervisor level, while at the same time taking Further Education qualifications to augment their knowledge. For more information on engineering progression routes we recommend you visit the careers page and progression map at the semta website hot-linked below.

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

and the progression map

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

Delivery and assessment of employee rights and responsibilities

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

Ema 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 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 2, Pathway 6: Materials Processing and Finishing

Description of this pathway

Materials Processing and Finishing (Semi skilled and Operator) total minimum credit value = 83 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)
Mould and Core maker	Make or form wax or sand cores or moulds used in the production of metal castings in foundries.
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.
Sand Caster	Producing 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 Modeling, Die Pattern and Casting Checks, Part Inspections and Quality Confirmations, Project control, Cost tracking, Supplier Support, Production Support and Process Planning.
Metal Molding, Coremaking, and Casting Machine Operator	Operate or tend metal molding, casting, or coremaking machines to mold or cast metal products Machines include centrifugal casting machines, vacuum casting machines, turnover draw-type coremaking machines, conveyor-screw coremaking machines, and die casting machines.
Casting Inspector	Inspect castings using a variety of techniques such as radiographic; magnetic particle; penetrant dye; ultrasonic crack detection

Qualifications

Competence qualifications available to this pathway

C1 - Level 2 NVQ Diploma in Materials Processing and Finishing (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1434/9	EAL	38	215	N/A
C1b	600/0731/X	Edexcel	38	215	N/A

Knowledge qualifications available to this pathway

K1 - Edexcel BTEC Level 2 Extended Certificate in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	500/7577/9	Edexcel	30	180	N/A

K2 - Edexcel BTEC Level 2 Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7576/7	Edexcel	60	360	N/A

K3 - City & Guilds Level 2 Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	600/0881/7	City & Guilds	42	360	N/A

Knowledge qualifications available to this pathway(cont.)

K4 - EAL Level 2 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/7595/0	EAL	39	330	N/A

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K4a provide the underpinning knowledge for C1a & C1b

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications support key areas of technical knowledge development needed for apprentices in engineering and manufacturing industries to carry out their duties in a safe and efficient manner.

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	1	5
GCSE qualification in English (with enhanced functional content)	E	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	1	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	1	5
GCSE qualification (with enhanced functional content) in Mathematics	E	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or...*	1	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)	1	5
GCSE qualification in ICT (with enhanced functional content)	E	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or... *	1	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 Functional skills requirements

Progression routes into and from this pathway

Progression routes into this pathway:

Entrants to this pathway are expected to be primarily school leavers who have completed their GCSE studies and in some cases relevant vocational activity such as a Diploma in engineering, Young Apprenticeship or extended work experience.

Other entrants may have experience from working in the sector in an engineering or manufacturing context, and are now seeking to become qualified by undertaking an apprenticeship programme.

Progression routes from this pathway:

It is likely that a significant number of Intermediate Apprentices will progress on completion of this pathway to the Advanced Apprenticeship in Engineering Manufacture at level 3. More

generally, most ex-apprentices aspire to a combination of internal promotion within the company to team leader or supervisor level, while at the same time taking Further Education qualifications to augment their knowledge. For more information on engineering progression routes we recommend you visit the careers page and progression map at the semta website hot-linked below.

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

and the progression map

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

Delivery and assessment of employee rights and responsibilities

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

Ema 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 2, Pathway 7: Engineering Technical Support

Description of this pathway

Engineering Technical Support (Semi skilled and Operator) total minimum credit value = 96 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)
Production Engineer (semi-skilled)	Day to day support for manufacturing/ engineering processes
Non-Destructive Testing	Carrying out radiographic, ultra-sonic, dye penetrant & magnetic particle inspection on components manufactured in metals, alloys & composites
Technical support engineer	Provides support for areas of the technical support function including communications software, test tools, performance, capacity planning, and eCommerce technology as required. Works as team member to develop, design and implement technical support systems or to complete specialty functions.
Quality control inspector	Carry out end of operation inspection to ensure machined components meet required tolerance and surface finish requirements
Metrology Assistant	Assist with the calibration of manufacturing guages and measurment devices in controlled temperature environments to ensure they are accurately calibrated to required standards

Qualifications

Competence qualifications available to this pathway

C1 - Level 2 NVQ Diploma in Engineering Technical Support (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	501/0372/6	EAL	51	215	N/A
C1b	501/0633/8	Edexcel	51	215	N/A

Knowledge qualifications available to this pathway

K1 - Edexcel BTEC Level 2 Extended Certificate in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	500/7577/9	Edexcel	30	180	N/A

K2 - Edexcel BTEC Level 2 Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7576/7	Edexcel	60	360	N/A

K3 - City & Guilds Level 2 Diploma in Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	600/0881/7	City & Guilds	42	360	N/A

Knowledge qualifications available to this pathway(cont.)

K4 - EAL Level 2 Diploma in Engineering Technology (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/7595/0	EAL	39	330	N/A

Combined qualifications available to this pathway

N/A

Notes on competence and knowledge qualifications (if any)

K1a to K4a provides the underpinning knowledge for C1a & C1b

The designated technical certificates underpin the knowledge elements of the competence qualification in this pathway. The knowledge qualifications support key areas of technical knowledge development needed for apprentices in engineering and manufacturing industries to carry out their duties in a safe and efficient manner.

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	1	5
GCSE qualification in English (with enhanced functional content)	E	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or... *	1	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	1	5
GCSE qualification (with enhanced functional content) in Mathematics	E	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or...*	1	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)	1	5
GCSE qualification in ICT (with enhanced functional content)	E	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or... *	1	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 Functional skills requirements

Progression routes into and from this pathway

Progression routes into this pathway:

Entrants to this pathway are expected to be primarily school leavers who have completed their GCSE studies and in some cases relevant vocational activity such as a Diploma in engineering, Young Apprenticeship or extended work experience.

Other entrants may have experience from working in the sector in an engineering or manufacturing context, and are now seeking to become qualified by undertaking an apprenticeship programme.

Progression routes from this pathway:

It is likely that a significant number of Intermediate Apprentices will progress on completion of this pathway to the Advanced Apprenticeship in Engineering Manufacture at level 3. More

generally, most ex-apprentices aspire to a combination of internal promotion within the company to team leader or supervisor level, while at the same time taking Further Education qualifications to augment their knowledge. For more information on engineering progression routes we recommend you visit the careers page and progression map at the semta website hot-linked below.

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

and the progression map

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Delivery and assessment of employee rights and responsibilities

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

Ema 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 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 and supporting requirements. 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:

Intermediate Apprenticeship (Level 2) - Engineering Manufacture

Pathway 1: Aerospace

Pathway duration approximately 18 months depending on the qualification and unit options selected

Level 2 NVQ Diploma in Aeronautical Engineering (QCF)

Total minimum credit value: 84 credits

Total GLH = 697 hours

- Competence = 215 minimum hours/47 minimum credits
- Knowledge = 180 minimum hours (smallest technical certificate) / 22 minimum credits
- Functional Skills (notional value 45 hours x 3) = 135 hours / 15 credits
- Mentoring 66 weeks x 1 hour/week = 66 hours
- PLTS = 60 hours
- ERR = 41 hours

Year 1 = 465 hours Year 2 = 232 hours

Pathway 2: Marine (Ship, Yacht, Boat building, maintenance and repair)

Pathway duration approximately 18 months depending on the qualification and unit options selected

Level 2 NVQ Diploma Marine Engineering (QCF)

Total minimum credit value: 98 credits

Total GLH = 697 hours

- Competence = 215 minimum hours /59 minimum credits
- Knowledge = 180 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 24 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours / 15 credits
- Mentoring 66 weeks x 1 hour/week = 66 hours
- PLTS = 60 hours
- ERR = 41 hours

Year 1=465 hours Year 2=232 hours

Pathway 3: Mechanical Manufacturing Engineering

Pathway duration approximately 18 months depending on the qualification and unit options selected

Level 2 NVQ Diploma in Mechanical Manufacturing Engineering (QCF)

Total minimum credit value:99 credits

Total GLH =697 hours

- Competence =215 minimum hours/54 minimum credits
- Knowledge =180 minimum hours (smallest technical certificate) /30 minimum credits
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 66 weeks x1 hour/week =66 hours
- PLTS = 60 hours
- ERR = 41 hours

Year 1 =465 hours Year 2=232 hours

Pathway 4: Engineering Maintenance and Installation

Pathway duration approximately 18 months depending on the qualification and unit options selected

Level 2 NVQ Diploma in Engineering Maintenance and Installation (QCF)

Total minimum credit value: 100 credits

Total GLH = 691 hours

- Competence = 239 minimum hours /63 minimum credits
- Knowledge = 150 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 22 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours / 15 credits

- Mentoring 66 weeks x 1 hour/week = 66 hours
 - PLTS = 60 hours
 - ERR = 41 hours
- Year 1=460 hours Year 2=231 hours

Pathway 5: Fabrication and Welding

Pathway duration approximately 18 months depending on the qualification and unit options selected

Level 2 NVQ Diploma in Fabrication and Welding Engineering (QCF)

Total minimum credit value: 85 credits

Total GLH =686 hours

- Competence =214 minimum hours/ 47 minimum credits
 - Knowledge =170 minimum hours (smallest technical certificate) /23 minimum credits
 - Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
 - Mentoring 66 weeks x1 hour/week = 66 hours
 - PLTS = 60 hours
 - ERR = 41 hours
- Year 1 =457 hours Year 2=229 hours

Pathway 6: Materials Processing and Finishing

Pathway duration approximately 18 months depending on the qualification and unit options selected

Level 2 NVQ Diploma in Materials Processing and Finishing (QCF)

Total minimum credit value:83 credits

Total GLH =697 hours

- Competence =215 minimum hours/38 minimum credits
 - Knowledge =180 minimum hours (smallest technical certificate) /30 minimum credits
 - Functional Skills (notional value 45 hours x 3) =135 hours/15 credits
 - Mentoring 66 weeks x 1 hour/week = 66 hours
 - PLTS = 60 hours
 - ERR = 41 hours
- Year 1 = 465 hours Year 2=232 hours

Pathway 7: Engineering Technical Support

Pathway duration approximately 18 months depending on the qualification and unit options

selected

Level 2 NVQ Diploma in Engineering Technical Support (QCF)

Total minimum credit value: 96 credits

Total GLH =697 hours

- Competence =215 minimum hours/51 minimum credits
- Knowledge =180 minimum hours (smallest technical certificate) /30 minimum credits
- Functional Skills (notional value 45 hours x 3 =135 hours /15 credits
- Mentoring 66 weeks x 1 hour/week =66 hours
- PLTS = 60 hours
- ERR = 41 hours

Year 1 = 465 hours Year 2=232 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 2 programme

Intermediate Apprenticeship (Level 2) - Engineering Manufacture

Pathway 1: Aerospace

Minimum off-the-job hours through pathway 1 are 482 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 69 % of the total pathway GLH.

Intermediate Apprenticeship (Level 2) - Engineering Manufacture

Pathway 2: Marine (Ship, Yacht, Boat building, maintenance and repair)

Minimum off-the-job hours through pathway 2 are 482 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 69 % of the total pathway GLH.

Intermediate Apprenticeship (Level 2) - Engineering Manufacture

Pathway 3: Mechanical Manufacturing Engineering

Minimum off-the-job hours through pathway 3 are 482 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 69 % of the total pathway GLH.

Intermediate Apprenticeship (Level 2) - Engineering Manufacture

Pathway 4: Engineering Maintenance and Installation

Minimum off-the-job hours through pathway 4 is 452 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 65 % of the total pathway GLH.

Intermediate Apprenticeship (Level 2) - Engineering Manufacture

Pathway 5: Fabrication and Welding

Minimum off-the-job hours through pathway 5 is 452 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 65% of the total pathway GLH.

Intermediate Apprenticeship (Level 2) - Engineering Manufacture

Pathway 6: Materials Processing and Finishing

Minimum off-the-job hours through pathway 6 is 482 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 69 % of the total pathway GLH.

Intermediate Apprenticeship (Level 2) - Engineering Manufacture

Pathway 7: Engineering Technical Support

Minimum off-the-job hours through pathway 7 is 482 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and responsibilities (ERR) PLTS and Mentoring.

This amounts to 69 % of the total pathway GLH.

How this requirement will be met

Apprentices following the 7 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).

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.

For both Functional and Key skills delivery methods vary widely, 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 companies 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 it 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

Intermediate Apprenticeship (Level 2) - Engineering Manufacture

Pathway 1: Aerospace

Minimum on-the-job hours through pathway 1 is 215 GLH and is evidenced by completion of the Level 2 NVQ Diploma in Aeronautical Engineering (QCF).

Intermediate Apprenticeship (Level 2) - Engineering Manufacture

Pathway 2: Marine (Ship, Yacht, Boat building, maintenance and repair)

Minimum on-the-job hours through pathway 2 is 215 GLH and is evidenced by completion of the Level 2 NVQ Diploma Marine Engineering (QCF).

Intermediate Apprenticeship (Level 2) - Engineering Manufacture

Pathway 3: Mechanical Manufacturing Engineering

Minimum on-the-job hours through pathway 3 is 215 GLH and is evidenced by completion of the Level 2 NVQ Diploma in Mechanical Manufacturing Engineering (QCF).

Intermediate Apprenticeship (Level 2) - Engineering Manufacture

Pathway 4: Engineering Maintenance and Installation

Minimum on-the-job hours through pathway 4 is 239 GLH and is evidenced by completion of the Level 2 NVQ Diploma in Engineering Maintenance and Installation (QCF).

Intermediate Apprenticeship (Level 2) - Engineering Manufacture

Pathway 5: Fabrication and Welding

Minimum on-the-job hours through pathway 5 is 214 GLH and is evidenced by completion of the Level 2 NVQ Diploma in Fabrication and Welding Engineering (QCF).

Intermediate Apprenticeship (Level 2) - Engineering Manufacture

Pathway 6: Materials Processing and Finishing

Minimum on-the-job hours through pathway 6 is 215 GLH and is evidenced by completion of the Level 2 NVQ Diploma in Materials Processing and Finishing (QCF)

Intermediate Apprenticeship (Level 2) - Engineering Manufacture

Pathway 7: Engineering Technical Support

Minimum on-the-job hours through pathway 7 is 215 GLH and is evidenced by completion of the Level 2 NVQ Diploma in Engineering Technical Support (QCF).

How this requirement will be met

The NVQ Diploma should be delivered in accordance with the Awarding Organisations delivery and assessment guidance, which includes the additional requirements as set down in Semta's Engineering unit assessment strategy. This can be downloaded from Semta's website using the Url address below.

www.semta.org.uk/training_providers_awarding/national_occupational_standard/qca_assessment_requirements.aspx

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

Ema 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

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.

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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 managers

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 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