

Engineering Manufacture (England)

IMPORTANT NOTIFICATION FOR ALL APPRENTICESHIP STARTS FROM 21 SEPTEMBER 2018

Modifications to SASE came into effect on 21 September 2018. Accordingly, SASE publication DFE-00236-2018 applies **both** to new Apprenticeship starts from 21 September 2018 **and** all Apprenticeships commenced before and not completed by 21 September 2018.

Latest framework version?

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Engineering Manufacture

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Framework information

Information on the Issuing Authority for this framework:

SEMTA

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

Issue number: 26	This framework includes:
Framework ID: FR04361	Level 2 <input checked="" type="checkbox"/> Level 3 <input checked="" type="checkbox"/> Level 4-7 <input type="checkbox"/>
Date this framework is to be reviewed by: 30/04/2019	This framework is for use in: England

Short description

This Intermediate Apprenticeship and Advanced Apprenticeship in Engineering Manufacture framework is designed to provide the skills, knowledge and competence requirements to work at semi-skilled or qualified operator level (Level 2) or craft or technician level (Level 3) as appropriate, to carry out a variety of engineering and manufacturing processes within the following range of sub-sectors: Automotive, Aerospace, Electronics, Mechanical, Marine, Electrical, Metal goods and Other Transport Equipment.

Contact information

Proposer of this framework

This Engineering Manufacture (England) framework has been operating since 1998 in blueprint form before being configured into the SASE. As such the original development steering group was the Semta National Training Framework Committee. Since then the framework has been reviewed by the large employer group together with their supply chains, GKN, Airbus, Jaguar Landrover, Siemens, Ford, Rolls Royce, Pilkington, GE Aviation, Tata Steel, JCB, and Babcock International have been involved in the review of both the framework and the National Occupational Standards. The framework has also been shared with the National Forum of Engineering Centres (NFEC) and the Engineering GTA network, who represent small and medium employers.

Developer of this framework

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Revising a framework

Why this framework is being revised

This framework is being revised to:

- add knowledge qualifications as requested by Awarding Organisations
- add competence qualification as requested by Awarding Organisation
- remove expired competence qualification as requested by Awarding Organisation
- update Awarding Organisation details for ABC Awards to Skills and Education Group Awards

Summary of changes made to this framework

ENGINEERING MANUFACTURE - Level 2

Pathway 3: Mechanical Manufacturing Engineering

- One competence qualification has been removed
- One competence qualification has been added

ENGINEERING MANUFACTURE - Level 3

Pathway 3: Mechanical Manufacturing Engineering

- Two knowledge qualifications have been added

Pathway 5: Engineering Maintenance

- Two knowledge qualifications have been added

Pathway 6: Fabrication and Welding

- One knowledge qualification has been added

Pathway 8: Engineering Technical Support

- One knowledge qualification has been added

Pathway 9: Electrical and Electronic Engineering

- One knowledge qualification has been added

Pathway 10: Installation and Commissioning

- One knowledge qualification has been added

Qualifications removed

ENGINEERING MANUFACTURE - Level 2

Pathway 3: Mechanical Manufacturing Engineering

City and Guilds Level 2 Diploma in Mechanical Manufacturing Engineering (501/1802/X)

Qualifications added

ENGINEERING MANUFACTURE - Level 2

Pathway 3: Mechanical Manufacturing Engineering

C2 - City and Guilds Level 2 Diploma in Advanced Manufacturing Engineering (Foundation Competence) (603/1704/8)

ENGINEERING MANUFACTURE - Level 3

Pathway 3: Mechanical Manufacturing Engineering

K37 - EAL Level 3 Diploma in Machining (Development Knowledge) (603/1033/9)

K38 - EAL Level 3 Diploma in Advanced Manufacturing Engineering (Development Knowledge) 603/1353/5)

Pathway 5: Engineering Maintenance

K43 - EAL Level 3 Diploma in Machining (Development Knowledge) (603/1033/9)

K44 - EAL Level 3 Diploma in Advanced Manufacturing Engineering (Development Knowledge) 603/1353/5)

Pathway 6: Fabrication and Welding

K29 - EAL Level 3 Diploma in Advanced Manufacturing Engineering (Development Knowledge) 603/1353/5)

Pathway 8: Engineering Technical Support

K40 - EAL Level 3 Diploma in Advanced Manufacturing Engineering (Development Knowledge)
603/1353/5)

Pathway 9: Electrical and Electronic Engineering

K31 - EAL Level 3 Diploma in Advanced Manufacturing Engineering (Development Knowledge)
603/1353/5)

Pathway 10: Installation and Commissioning

K29 - EAL Level 3 Diploma in Advanced Manufacturing Engineering (Development Knowledge)
603/1353/5)

Qualifications that have been extended

None.

Purpose of this framework

Summary of the purpose of the framework

Intermediate Apprenticeships and Advanced Apprenticeships are jobs with an accompanying skills development programme designed by employers in the sector. It allows the apprentice to gain technical knowledge and real practical experience, along with functional and personal skills, required for their immediate job and future career. These are acquired through a mix of learning in the workplace, formal off-the-job training and the opportunity to practice and embed new skills in a real work context. This broader mix differentiates the Apprenticeship experience from training delivered to meet narrowly focused job needs.

All apprentices commencing their Intermediate Apprenticeship or Advanced Apprenticeship must have an Apprenticeship Agreement between the employer and apprentice. This can be used to reinforce the understanding of the requirements of the apprenticeship. On completion of the Apprenticeship the apprentice must be able to undertake the full range of duties, in the range of circumstances appropriate to the job, confidently and competently to the standard set by the industry.

Sector background

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

The 'leading-edge' sectors include:

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

The 'mature engineering' sectors include:

- Electrical
- Metal goods
- Mechanical
- Other Transport Equipment

Sector employment and establishments

The combined Advanced Manufacturing and Engineering (AME) sub-sectors in England employ 1.4 million people across 131,000 establishments. Of those working in AME, an estimated 763,000 people are employed in technical roles such as professional engineers, scientists and technologists.

Key AME sub-sectors in England include consultancy, testing and analysis (25%), metals (24%), mechanical equipment (14%) and automotive (9%).

Nearly half of all AME employment in England is concentrated in the South East (17%), West Midlands (15%) and North West (13%).

Micro-sized establishments (less than 10 employees) account for 84% of total AME establishments, Small and Medium-sized Enterprises (SMEs (10 to 249 employees)) represent 15% of establishments and 1% of AME establishments in England are large (250 employees plus).

Demographics of the technical workforce in the AME sectors in England

Working status - 92% of the AME technical workforce is a company employee and 94% of the technical workforce is employed on a full-time basis.

Gender - only 9% of the technical workforce is female.

Age - only 8% of the technical workforce is aged 16-24 years old, with 14% aged 60 years and over.

Disability - only 10% of the technical workforce has some sort of disability.

Ethnicity - only 6% of the technical workforce is from an ethnic minority.

Occupations

In terms of technical occupations, approximately 58,000 people are employed as technicians, 292,000 people are employed in craft level occupations and 137,000 in operator level occupations. These three technical occupations account for 64% of total employment in technical occupations within the AME sectors in England.

Employment trends

The AME sectors in England have experienced a period of major restructuring. Between 2010 to 2018, there was a net gain of nearly 56,000 jobs (+4%), compared with an increase in employment of +5% across all sectors in England.

Employment projections

Taking into account retirements, for operator, craft and technician technical roles, there is expected to be a net requirement across the AME sectors in England for 50,000 new recruits (10,000 per annum) in these occupations between 2016-2020.

Vacancies

Employers in the AME sectors in England show a substantial demand for new recruits. In 2017, it is estimated that 16% of AME establishments in England had vacancies compared to 15% of establishments across all sectors. In total, there were 16,000 technical vacancies across the

AME sectors in England. In terms of specific occupations, it is estimated that there were vacancies for 2,200 operators, 7,200 craftspersons and 1,700 technicians.

Over half of all AME vacancies in England were from SMEs (50-249 employees).

It is estimated that 7% of AME employers in England had hard-to-fill vacancies. Half of all hard-to-fill vacancies were in craft, technician and operator occupations. Skill shortages in applicants were the main reason for these hard-to-fill vacancies.

Drivers of skills change

The AME sectors felt that the main drivers of future skills requirements would be new legislative or regulatory requirements, introduction of new technologies or equipment, development of new products and services, introduction of new working practices and increased competitive pressure. Large and medium-sized employers were most likely to expect a change in their skills needs from the key drivers identified.

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

Skill needs and gaps

17% of AME establishments in England reported skills gaps. The incidence of skills gaps increases by size of establishment, ranging from 10% of micro-sized establishments to 49% of large establishments.

It is estimated that 5% of the AME workforce in England have skills gaps. The main reason for skills gaps in the AME sectors is a lack of experience/being recently recruited.

The main skills cited as lacking in employees were technical, practical or job specific skills (approximately three quarters of establishments reporting skills gaps). Employers were most likely to have technical skills gaps with craft, operator and technician occupations.

The other main skills gaps highlighted include problem solving, team working, oral communications and management skills.

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 to overcome skills gaps by AME employers was to increase training activity/spend or increase/expand trainee programmes.

Operator/semi-skilled occupations Employment

- 137,000 operators are employed in technical roles in the AME sectors in England

Key occupations

Key operator level occupations include: assemblers (vehicles and metal goods); metalworking machine operatives; assemblers (electrical and electronic products); routine inspectors and testers; assemblers and routine operatives and plant and machine operatives.

Demographic profile for operators

Female: 19%

Age 16-24: 8%

Age 60+: 14%

Have any disability: 10%

Ethnicity (non-white): 8%

Proportion of total employment: 10%

Vacancies

- It is estimated that in there were 2,200 operator vacancies across the AME sectors in England in 2017.

Skills gaps

- 4% of AME establishments in England had skills gaps for operators.
- 7% of operators had skills gaps.

Future skills demand

- 13,500 operators (2,700 per annum) are required into the AME sectors in England over the period 2016-2020.

The Intermediate Apprenticeship in Engineering Manufacture 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 frameworks are key to addressing the skills needs and gaps highlighted.

Craft/technician occupations Employment

- 292,000 crafts-person and 58,000 technicians are employed in technical roles in the AME sectors in England.

Key occupations

- Key technician level occupations include: engineering technicians; laboratory technicians; draughtspersons and science, engineering and production technicians.
- Key craft level occupations include: metal working production and maintenance fitters; welding trades; electricians and electrical fitters; vehicle technicians and aircraft maintenance and related trades.

Demographic profile for engineering craftspersons

Female: 2%

Age 16-24: 11%

Age 60+: 15%

Have any disability: 11%

Ethnicity (non-white): 4%

Proportion of total employment: 20%

Demographic profile for engineering technicians

Female: 8%

Age 16-24: 9%

Age 60+: 12%

Have any disability: 8%

Ethnicity (non-white): 5%

Proportion of total employment: 4%

Vacancies

- It is estimated that there were 7,200 craftsperson vacancies and 1,700 technician vacancies across the AME sectors in England in 2017.

Skills gaps

- 6% of AME establishments had skills gaps for craftspersons and 2% had skills gaps for technicians.
- 6% of craftspersons and 8% of technicians had skills gaps.

The Advanced Apprenticeship in Engineering Manufacture framework has been developed to address critical skills gaps and shortages as detailed above and contains fourteen pathways:

Pathway 1: Aerospace

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

Pathway 3: Mechanical Manufacturing Engineering

Pathway 4: Marine (Yacht and boat building, maintenance and repair)

Pathway 5: Engineering Maintenance

Pathway 6: Fabrication and Welding

Pathway 7: Materials Processing and Finishing

Pathway 8: Engineering Technical Support

Pathway 9: Electrical and Electronic Engineering

Pathway 10: Installing and Commissioning

Pathway 11: Engineering Toolmaking

Pathway 12: Automotive

Pathway 13: Engineering Woodworking, Pattern making and Model Making

Pathway 14: Engineering Leadership

These pathways are key to addressing the skills gaps and needs identified.

Future skills demand

- Approximately 30,000 craftspersons (6,000 per annum) and 6,000 technicians (1,200 per annum) are required into the AME sectors in England over the period 2016-2020.

The Engineering Manufacture framework at Level 2 and Level 3 covers a broad range of engineering sub-sectors such as: Automotive, Aerospace, Electronics, Mechanical, Marine, Electrical, Metal goods and Other Transport Equipment. It is designed to provide the skills, knowledge and competence requirements through specific sub-sector pathways to operate at operator, semi-skilled, craft or technician level within these areas.

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

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

There are a very significant range of job titles, roles and occupations within the scope of this framework at both Level 2 and Level 3, but generally operator, semi-skilled and craft roles are more common within the more mature sub-sectors and technician roles in the leading edge sub-sectors.

Aims and objectives of this framework (England)

The aim of this framework is to provide apprentices with the skills, underpinning knowledge and transferable skills required to operate in each of the engineering sub-sectors, carrying out a wide variety of defined semi-skilled, craft and technician roles through the pathways described, while also aiming to meet current and future skills needs by supporting retention, motivation and performance.

Further objectives are to:

- provide a structured training programme to develop and upskill the workforce
- develop more craft and technicians through advanced apprenticeships (Skills for Growth Strategy England)
- provide apprentices with the relevant semi-skilled, craft or technician skills required by engineering manufacturing employers
- ensure apprentices can undertake engineering and manufacturing operations safely and effectively
- incorporate the latest developments in Engineering National Occupational Standards (NOS) at levels 2 & 3
- provide a range of pathways that meet engineering employer's needs
- help improve recruitment and retention rates within the industry by offering appropriate career progression
- improve productivity rates and profitability (increased GVA per person)
- tackle the diversity issue within the sector, especially equality and diversity within the sector as defined above in the framework summary
- increase participation rates in the framework at Intermediate and Advanced Apprenticeship level.
- tackle the age profile within engineering (14% workforce is over the age of 60)
- help reduce 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
- develop apprentices' employability and skills making them more attractive to all employers whichever career they choose.

Entry conditions for this framework

The Level 2 Intermediate framework offers seven pathways. Employers wish to attract applicants who have an interest in working in an engineering manufacture environment and welcome applicants from a diverse range of backgrounds and anticipate that they will have a wide range of experience, achievements and qualifications.

As a guide, the Intermediate Apprenticeship in Engineering Manufacture framework (Level 2) is suitable for applicants who have five GCSEs grades D to E (new equivalent grades 3 to 2) 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, communication 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.

Employers would be interested in applicants who:

- are keen and motivated to work in an engineering/manufacturing environment or
- are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace or
- have previous work experience or employment in the sector or
- have GCSEs in English, Maths and Science (grade D to E or higher/ new equivalent grade 2 or higher) or
- are practically minded and want to work with their hands or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have completed a Young Apprenticeship in Engineering or other related area or
- have a Welsh Baccalaureate (Welsh applicants) or
- have completed tests in basic numeracy, literacy and communication skills and have spatial awareness

Initial Assessment

Training providers/colleges and employers will use initial assessment to ensure that applicants have a fair opportunity to demonstrate their ability and to tailor programmes to meet individual needs, recognising prior qualifications and experience.

Rules to avoid the need to repeat qualifications

Processes exist to make sure that applicants with prior knowledge, qualifications and/or experience are not disadvantaged by having to repeat learning. Colleges, Training Providers and Awarding Organisations will be able to advise applicants on the current rules for accrediting prior learning (APL) and experience. It is understood that where applicants have

accredited prior learning that Apprentices must be offered training which helps them to develop new skills and learning at a higher level.

Transferable skills

An Intermediate Apprenticeship framework specifies that an apprentice needs to achieve (or have achieved) acceptable qualifications at required minimum grades/levels. From 6th April 2015 the "5 year rule" has been removed so acceptable qualifications, achieved before September 2012, are now in scope. This includes GCSEs, iGCSEs, A and AS Levels, O Levels and Key Skills.

Changes to the English and Maths minimum requirements for Apprenticeship starts from 21st September 2018, and Apprenticeships remaining incomplete on 21st September 2018, are summarised in the preface to this framework. This now allows for the acceptance of a wider range of UK-wide qualifications and also certain international qualifications, where these are supported by a suitable NARIC Statement of Comparability, and can be found at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/630068/Specification_of_Apprenticeship_Standards_for_England_.pdf

Knowledge qualifications

If applicants already have one of the knowledge qualifications or individual units at Level 2 before starting their apprenticeship (see knowledge qualifications page) they may count this and will not have to repeat the qualification providing they achieved this qualification within 5 years of starting the apprenticeship. The hours that were spent gaining the qualification may be counted towards the total hours for the apprenticeship.

Competence qualifications

If applicants already have one of the competence qualifications at Level 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. The hours that were spent gaining the competence qualification may be counted towards the total hours for the apprenticeship.

It is important however that there is agreement between the employer and the apprentice that the applicant is currently competent.

Prior experience in the sector

Applicants that are already working in the sector or who have recently worked in the sector at the appropriate level can apply to have their experience formally recognised by an Awarding Organisation and this could count towards the qualification(s) in this framework.

The Level 3 Advanced framework offers a broad range of activities across fourteen pathways. Employers would welcome applicants from a wide and diverse background and wish to attract applicants who have an interest to work in a manufacturing or engineering environment.

As a guide, the Advanced Apprenticeship in Engineering Manufacture framework is suitable for applicants who have five GCSEs grade C (new equivalent grade 4) or above including Maths, English, and a Science. This is not a hard and fast rule but may vary according to the pathway chosen (operator, semi-skilled, craft or technician) and the suitability of individual candidates.

Employers would be interested in applicants who:

- have completed an Intermediate Apprenticeship at Level 2 in the relevant engineering/manufacturing occupational discipline or
- have GCSEs in English, Maths and Science - grade C (new equivalent grade 4) or above or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have completed a Young Apprenticeship in Engineering or other related area or
- have a Welsh Baccalaureate (Welsh applicants) or
- are willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace or
- have previous work experience or employment in the sector or
- have the ability to follow instructions and diagrams
- have literacy and numeracy to work with data
- are good team worker, who can also work under own initiative
- are keen and motivated to work in an engineering or manufacturing environment

Selection process

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

Rules to avoid the need to repeat qualifications

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.

Transferable skills

An Advanced Apprenticeship framework specifies that an apprentice needs to achieve (or have achieved) acceptable qualifications at required minimum grades/levels. From 6th April 2015 the "5 year rule" has been removed so acceptable qualifications, achieved before September 2012, are now in scope. This includes GCSEs, iGCSEs, A and AS Levels, O Levels and Key Skills.

Changes to the English and Maths minimum requirements for Apprenticeship starts from 21st September 2018, and Apprenticeships remaining incomplete on 21st September 2018, are summarised in the preface to this framework. This now allows for the acceptance of a wider range of UK-wide qualifications and also certain international qualifications, where these are supported by a suitable NARIC Statement of Comparability.

Knowledge qualifications

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

Applicants wishing to undertake a BTEC Level 4 HNC Diploma underpinning knowledge qualification should already have achieved a Technical Certificate at Level 3, A Levels or equivalent in the relevant subject area and be age 18+ (as specified by the qualifications entry on RITS).

Competence qualifications

If applicants already have one of the competence qualifications at Level 3 (see competence qualifications page) before starting their apprenticeship, they may count this and will not have to repeat the qualification providing they have achieved this qualification within five years of starting their apprenticeship.

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 formally recognised by an Awarding Organisation and this could count towards the qualification(s) in this framework.

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

Level 2

Title for this framework at level 2

Intermediate Level in Engineering Manufacture (Operator and Semi-skilled)

Pathways for the 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 (Operator and Semi-skilled) - total minimum credit value = 84 credits

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

- **Competence = 47 minimum credits**
- **Knowledge = 22 minimum credits**
- **Transferable Skills = 15 credits**

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

There are no additional requirements other than the general entry conditions

Job title(s)	Job role(s)
Aero engine (strip and wash) Fitter	Disassemble aero engines and components for cleaning and inspection
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 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
Semi-skilled Electrical Loomers/PCB assembly	Use the following processes to produce wiring looms, crimping, braiding, terminating and soldering. They also must read and interpret drawings and layouts to assemble circuits.
Survival Equipment Maintenance Mechanic	Ensures onboard aircraft survival equipment is maintained and remains fully functional

Qualifications

Competence qualifications available to this pathway

C1 - Level 2 NVQ Diploma in Aeronautical Engineering					
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	601/4455/5	ETC Awards Ltd	47	215	N/A

Knowledge qualifications available to this pathway

K1 - City & Guilds Level 2 Diploma in Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	600/0881/7	City & Guilds	42	360	N/A

K2 - City & Guilds Level 2 Diploma in Aircraft Maintenance (Civil Aircraft)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	600/1928/1	City & Guilds	56	485	N/A

K3 - EAL Level 2 Diploma in Engineering Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/7595/0	EAL	39	330	N/A

K4 - City & Guilds Level 2 Certificate in Aircraft Maintenance (Military Aircraft)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	600/1969/4	City & Guilds	22	180	N/A

K5 - City & Guilds Level 2 Diploma in Aircraft Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	600/3409/9	City & Guilds	40	340	N/A

K6 - City & Guilds Level 2 Diploma in Engineering - Military Marine and Air Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	600/2708/3	City & Guilds	42	295	N/A

K7 - City & Guilds Level 2 Diploma in Engineering - Military Air Engineering (Survival Equipment)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	600/7976/9	City & Guilds	57	447	N/A

K8 - Pearson BTEC Level 2 Extended Certificate in Engineering (Specialist: Manufacturing Engineering)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	500/8270/X	Pearson	30	180	N/A

K9 - EAL Level 2 Certificate in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	601/5670/3	EAL	25	230	N/A

K10 - EAL Level 2 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	601/5669/7	EAL	39	330	N/A

K11 - ETCAL Level 2 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	601/6008/1	ETC Awards Ltd	42	360	N/A

K12 - City & Guilds Level 2 Technical Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	603/0294/X	City & Guilds	36	360	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

K1 - K12 provide the underpinning knowledge for C1a - 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.

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required, including a broad range of mathematical, scientific and engineering manufacturing principles and processes.

After completing the designated knowledge qualification apprentices should be able to:

- understand health and safety requirements
- be able to communicate in an engineering manufacturing environment
- be able to work effectively in an engineering manufacturing environment
- understand basic engineering manufacturing principles and processes.

Transferable skills (England)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into this pathway

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

More specifically they may:

- have previous employment or work experience in the sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have GCSE's in English, Maths and Science (grade D to E or higher/ new equivalent grade 2 or higher) or
- be keen and motivated to work in the engineering/manufacturing industry or
- be practically minded and want to work with their hands or
- be willing to undertake a course of training both on-the-job and off-the job and apply this learning in the workplace or
- have completed a Young Apprenticeship or similar in Engineering or other related area or
- have a Welsh Baccalaureate (Welsh applicants) or
- have completed tests in basic numeracy, literacy and communications skills and have spatial awareness.

Other entrants may have experience from working in the sector in a manufacturing context, and are now seeking to become qualified by undertaking an apprenticeship programme. Particular interest would be shown to those applicants who have had previous work experience or employment in the sector.

Progression routes from this pathway

More generally, most ex-apprentices will start off by carrying out semi-skilled job roles within manufacturing and engineering (see job roles described for the pathway). It is likely that a period of consolidation will be required in these roles before progression can take place.

Most will aspire to a combination of internal promotion within their companies to team leader or supervisor level, while at the same time this affords the opportunity to undertake Further Education qualifications or an Advanced Apprenticeship to upgrade their competence and knowledge to fully skilled status. The Advanced Apprenticeship offers a choice of 14 occupational sub-sectors such as aerospace, automotive, marine, electrical/electronics etc. This gives wide ranging opportunity.

To further assist apprentices plan their careers we recommend they visit the following websites:

<http://www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx>

nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

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

Description of this pathway

Marine (Operator and Semi-skilled) - total minimum credit value = 104 credits

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

- **Competence = 59 minimum credits**
- **Knowledge = 30 minimum credits**
- **Transferable Skills = 15 credits**

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

There are no additional requirements other than the general entry conditions

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					
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	Pearson	59	215	N/A

Knowledge qualifications available to this pathway

K1 - City & Guilds Level 2 Diploma in Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	600/0881/7	City & Guilds	42	360	N/A

K2 - 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
K2a	600/2304/1	City & Guilds	32	280	N/A

K3 - EAL Level 2 Diploma in Engineering Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/7595/0	EAL	39	330	N/A

K4 - Skills and Education Group Awards Level 2 Certificate in Fabrication and Welding Practice

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	600/5190/5	Skills and Education Group Awards	31	260	N/A

K5 - Pearson BTEC Level 2 Extended Certificate in Engineering (Specialist: Manufacturing Engineering)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/8270/X	Pearson	30	180	N/A

K6 - EAL Level 2 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	601/5669/7	EAL	39	330	N/A

K7 - City & Guilds Level 2 Technical Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	603/0294/X	City & Guilds	36	360	N/A

K8 - Skills and Education Group Awards Level 2 Certificate in Fabrication and Welding Practice

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	603/2243/3	Skills and Education Group Awards	26	230	N/A

K9 - City & Guilds Level 2 Diploma in Boatbuilding (Foundation)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	603/0348/7	City & Guilds	50	460	N/A

K10 - City & Guilds Level 2 Diploma in Marine Engineering (Foundation)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	603/2237/8	City & Guilds	61	530	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

K1 - K10 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.

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required, including a broad range of mathematical, scientific and engineering manufacturing principles and processes.

After completing the designated knowledge qualification apprentices should be able to:

- understand health and safety requirements
- be able to communicate in an engineering manufacturing environment
- be able to work effectively in an engineering manufacturing environment
- understand basic engineering manufacturing principles and processes.

Transferable skills (England)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into this pathway

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

More specifically they may:

- have previous employment or work experience in the sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have GCSE's in English, Maths and Science (grade D to E or higher/new equivalent grade 2 of higher) or
- be keen and motivated to work in the engineering/manufacturing industry or
- be practically minded and want to work with their hands or
- be willing to undertake a course of training both on-the-job and off-the job and apply this learning in the workplace or
- have completed a Young Apprenticeship or similar in Engineering or other related area or
- have a Welsh Baccaulaureate (Welsh applicants) or
- have completed a Young Apprenticeship or similar in Engineering or other related area or
- have completed tests in basic numeracy, literacy and communications skills and have spatial awareness.

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

Particular interest would be shown to those applicants who have had previous work experience or employment in the sector.

Progression routes from this pathway

More generally, most ex-apprentices will start off by carrying out semi-skilled job roles within manufacturing and engineering (see job roles described for the pathway). It is likely that a period of consolidation will be required in these roles before progression can take place.

Most will aspire to a combination of internal promotion within their companies to team leader or supervisor level, while at the same time this affords the opportunity to undertake Further Education qualifications or an Advanced Apprenticeship to upgrade their competence and knowledge to fully skilled status. The Advanced Apprenticeship offers a choice of 14 occupational sub-sectors such as aerospace, automotive, marine, electrical/electronics etc. This gives wide ranging opportunity.

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/job-family/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Level 2, Pathway 3: Mechanical Manufacturing Engineering

Description of this pathway

Mechanical Manufacturing Engineering (Operator and Semi-skilled) - total minimum credit value = 94 credits

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

- **Competence = 54 minimum credits**
- **Knowledge = 25 minimum credits**
- **Transferable Skills = 15 credits**

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

There are no additional requirements other than the general entry conditions

Job title(s)	Job role(s)
Machine Setter 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 sheet fabrications and equipment.
CNC Operator/Setter	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					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	500/9851/2	EAL	54	215	N/A
C1b	501/0739/2	Pearson	54	215	N/A
C1c	600/2653/4	ETC Awards Ltd	54	215	N/A

C2 - Level 2 Diploma in Advanced Manufacturing Engineering (Foundation Competence)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C2a	603/1704/8	City & Guilds	N/A	418	N/A

Knowledge qualifications available to this pathway

K1 - City & Guilds Level 2 Diploma in Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	600/0881/7	City & Guilds	42	360	N/A

K2 - EAL Level 2 Diploma in Mechanical Engineering Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/0979/0	EAL	39	330	N/A

K3 - EAL Level 2 Diploma in Engineering Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/7595/0	EAL	39	330	N/A

K4 - IMI Level 2 Diploma in Motorsport Vehicle Maintenance & Repair

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	600/2657/1	IMI	61	494	N/A

K5 - IMI Level 2 Extended Diploma in Motorsport Vehicle Maintenance & Repair

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	600/2580/3	IMI	79	602	N/A

K6 - City & Guilds Level 2 Certificate in Engineering - Military

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	600/2539/6	City & Guilds	35	300	N/A

K7 - Pearson BTEC Level 2 Extended Certificate in Engineering (Specialist: Manufacturing Engineering)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	500/8270/X	Pearson	30	180	N/A

K8 - EAL Level 2 Certificate in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	601/5670/3	EAL	25	230	N/A

K9 - EAL Level 2 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	601/5669/7	EAL	39	330	N/A

K10 - ETCAL Level 2 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	601/6008/1	ETC Awards Ltd	42	360	N/A

K11 - Pearson BTEC Level 2 Diploma in Vehicle Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	600/4341/6	Pearson	60	360	N/A

K12 - ETCAL Level 2 Extended Certificate in Engineering Principles

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	601/8073/0	ETC Awards Ltd	30	260	N/A

K13 - EAL Level 2 Certificate in Cycle Maintenance

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	603/0586/1	EAL	25	150	N/A

K14 - City & Guilds Level 2 Technical Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K14a	603/0294/X	City & Guilds	36	360	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

K1 - K14 provide the underpinning knowledge for C1a - 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.

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required, including a broad range of mathematical, scientific and engineering manufacturing principles and processes.

After completing the designated knowledge qualification apprentices should be able to:

- understand health and safety requirements
- be able to communicate in an engineering manufacturing environment
- be able to work effectively in an engineering manufacturing environment
- understand basic engineering manufacturing principles and processes.

Transferable skills (England)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into this pathway

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

More specifically they may:

- have previous employment or work experience in the sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have GCSE's in English, Maths and Science (grade D to E or higher/new equivalent grade 2 or higher) or
- be keen and motivated to work in the engineering/manufacturing industry or
- be practically minded and want to work with their hands or
- be willing to undertake a course of training both on-the-job and off-the job and apply this learning in the workplace or
- have completed a Young Apprenticeship or similar in Engineering or other related area or
- have a Welsh Baccalaureate (Welsh applicants) or
- have completed tests in basic numeracy, literacy and communications skills and have spatial awareness.

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

Particular interest would be shown to those applicants who have had previous work experience or employment in the sector.

Progression routes from this pathway

More generally, most ex-apprentices will start off by carrying out semi-skilled job roles within manufacturing and engineering (see job roles described for the pathway). It is likely that a period of consolidation will be required in these roles before progression can take place.

Most will aspire to a combination of internal promotion within their companies to team leader or supervisor level, while at the same time this affords the opportunity to undertake Further Education qualifications or an Advanced Apprenticeship to upgrade their competence and knowledge to fully skilled status. The Advanced Apprenticeship offers a choice of 14 occupational sub-sectors such as aerospace, automotive, marine, electrical/electronics etc. This gives wide ranging opportunity.

To further assist apprentices plan their careers we recommend they visit the following websites:

<http://www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx>

nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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

customer@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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Level 2, Pathway 4: Engineering Maintenance and Installation

Description of this pathway

Engineering Maintenance and Installation (Operator and Semi-skilled) - total minimum credit value = 98 credits

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

- **Competence = 63 minimum credits**
- **Knowledge = 20 minimum credits**
- **Transferable Skills = 15 credits**

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

There are no additional requirements to the general framework entry conditions

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					
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	Pearson	63	239	N/A
C1d	601/5836/0	ETC Awards Ltd	63	239	N/A

Knowledge qualifications available to this pathway

K1 - City & Guilds Level 2 Diploma in Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	600/0881/7	City & Guilds	42	360	N/A

K2 - EAL Level 2 Diploma in Engineering Technology					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7595/0	EAL	39	330	N/A

K3 - EAL Level 2 Certificate in Engineering Maintenance on Military Vehicles and Equipment

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	600/2116/0	EAL	23	200	N/A

K4 - 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
K4a	600/2304/1	City & Guilds	32	280	N/A

K5 - EAL Level 2 Diploma in Maintenance Engineering Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	501/1059/7	EAL	39	330	N/A

K6 - City & Guilds Level 2 Certificate in Aircraft Maintenance (Military Aircraft)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	600/1969/4	City & Guilds	22	180	N/A

K7 - City & Guilds Level 2 Diploma in Engineering - Military Marine and Air Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	600/2708/3	City & Guilds	42	295	N/A

K8 - City & Guilds Level 2 Certificate in Engineering - Military

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	600/2539/6	City & Guilds	35	300	N/A

K9 - City & Guilds Level 2 Certificate in Cycle Mechanics

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	600/0660/2	City & Guilds	20	103	N/A

K10 - City & Guilds Level 2 Certificate in Light Vehicle Maintenance and Repair Principles

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	600/1177/4	City & Guilds	34	310	N/A

K11 - IMI Level 2 Certificate in Cycle Maintenance and Repair

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	600/5835/3	IMI	20	103	N/A

K12 - EAL Level 2 Diploma in Electrical Installation

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	600/6724/X	EAL	50	486	N/A

K13 - Pearson BTEC Level 2 Extended Certificate in Engineering (Specialist: Manufacturing Engineering)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	500/8270/X	Pearson	30	180	N/A

K14 - Pearson BTEC Level 2 Certificate in Military Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K14a	601/4141/4	Pearson	33	270	N/A

K15 - EAL Level 2 Certificate in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K15a	601/5670/3	EAL	25	230	N/A

K16 - EAL Level 2 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K16a	601/5669/7	EAL	39	330	N/A

K17 - ETCAL Level 2 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K17a	601/6008/1	ETC Awards Ltd	42	360	N/A

K18 - City & Guilds Level 2 Diploma in Electrical Installations (Buildings and Structures)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K18a	600/5498/0	City & Guilds	49	454	N/A

K19 - ETCAL Level 2 Extended Certificate in Engineering Principles

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K19a	601/8073/0	ETC Awards Ltd	30	260	N/A

K20 - EAL Level 2 Certificate in Cycle Maintenance

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K20a	603/0586/1	EAL	25	150	N/A

K21 - EAL Level 2 Intermediate Diploma in Electrical Installation

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K21a	601/4561/4	EAL	50	486	N/A

K22 - City & Guilds Level 2 Technical Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K22a	603/0294/X	City & Guilds	36	360	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

K1 - K22 provide the underpinning knowledge for C1a - C1d

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.

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required, including a broad range of mathematical, scientific and engineering manufacturing principles and processes.

After completing the designated knowledge qualification apprentices should be able to:

- understand health and safety requirements
- be able to communicate in an engineering manufacturing environment
- be able to work effectively in an engineering manufacturing environment
- understand basic engineering manufacturing principles and processes.

Transferable skills (England)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into this pathway

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

More specifically they may:

- have previous employment or work experience in the sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have GCSE's in English, Maths and Science (grade D to E or higher/new equivalent grade 2 or higher) or
- be keen and motivated to work in the engineering/manufacturing industry or
- be practically minded and want to work with their hands or
- be willing to undertake a course of training both on-the-job and off-the job and apply this learning in the workplace or
- have completed a Young Apprenticeship or similar in Engineering or other related area or
- have a Welsh Baccalaureate (Welsh applicants) or
- have completed tests in basic numeracy, literacy and communications skills and have spatial awareness.

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

Particular interest would be shown to those applicants who have had previous work experience or employment in the sector.

Progression routes from this pathway

More generally, most ex-apprentices will start off by carrying out semi-skilled job roles within manufacturing and engineering (see job roles described for the pathway). It is likely that a period of consolidation will be required in these roles before progression can take place.

Most will aspire to a combination of internal promotion within their companies to team leader or supervisor level, while at the same time this affords the opportunity to undertake Further Education qualifications or an Advanced Apprenticeship to upgrade their competence and knowledge to fully skilled status. The Advanced Apprenticeship offers a choice of 14 occupational sub-sectors such as aerospace, automotive, marine, electrical/electronics etc. This gives wide ranging opportunity.

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Level 2, Pathway 5: Fabrication and Welding

Description of this pathway

Fabrication and Welding (Operator and Semi-skilled) - total minimum credit value = 85 credits

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

- **Competence = 47 minimum credits**
- **Knowledge = 23 minimum credits**
- **Transferable Skills = 15 credits**

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

There are no additional requirements to the general framework entry conditions

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
Maintenance Welding Operative	Under direction, performs skilled welding in the repair, modification, and fabrication of equipment and facilities; makes minor mechanical repairs on a variety of heavy equipment; and performs related duties as required

Qualifications

Competence qualifications available to this pathway

C1 - Level 2 NVQ Diploma in Fabrication and Welding Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/9174/5	EAL	47	214	N/A
C1b	601/0077/1	City & Guilds	47	214	N/A
C1c	601/1820/9	ETC Awards Ltd	47	214	N/A

Knowledge qualifications available to this pathway

K1 - City & Guilds Level 2 Diploma in Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	600/0881/7	City & Guilds	42	360	N/A

K2 - EAL Level 2 Diploma in Fabrication and Welding Engineering Technology					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/1058/5	EAL	39	330	N/A

K3 - EAL Level 2 Diploma in Engineering Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/7595/0	EAL	39	330	N/A

K4 - EAL Level 2 Certificate in Positional Welding

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	501/1807/9	EAL	23	170	N/A

K5 - 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
K5a	600/2304/1	City & Guilds	32	280	N/A

K6 - City & Guilds Level 2 Certificate in Engineering - Military

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	600/2539/6	City & Guilds	35	300	N/A

K7 - City & Guilds Level 2 Certificate in Light Vehicle Maintenance and Repair Principles

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	600/1177/4	City & Guilds	34	310	N/A

K8 - Skills and Education Group Awards Level 2 Certificate in Fabrication and Welding Practice

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	600/5190/5	Skills and Education Group Awards	31	260	N/A

K9 - Pearson BTEC Level 2 Extended Certificate in Engineering (Specialist: Manufacturing Engineering)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	500/8270/X	Pearson	30	180	N/A

K10 - Pearson BTEC Level 2 Certificate in Military Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	601/4141/4	Pearson	33	270	N/A

K11 - EAL Level 2 Certificate in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	601/5670/3	EAL	25	230	N/A

K12 - EAL Level 2 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	601/5669/7	EAL	39	330	N/A

K13 - ETCAL Level 2 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	601/6008/1	ETC Awards Ltd	42	360	N/A

K14 - ETCAL Level 2 Extended Certificate in Engineering Principles

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K14a	601/8073/0	ETC Awards Ltd	30	260	N/A

K15 - City & Guilds Level 2 Technical Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K15a	603/0294/X	City & Guilds	36	360	N/A

K16 - Skills and Education Group Awards Level 2 Certificate in Fabrication and Welding Practice

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K16a	603/2243/3	Skills and Education Group Awards		230	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

K1 - K16 provide the underpinning knowledge for C1a - 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.

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required, including a broad range of mathematical, scientific and engineering manufacturing principles and processes.

After completing the designated knowledge qualification apprentices should be able to:

- understand health and safety requirements
- be able to communicate in an engineering manufacturing environment
- be able to work effectively in an engineering manufacturing environment
- understand basic engineering manufacturing principles and processes.

Transferable skills (England)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into this pathway

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

More specifically they may:

- have previous employment or work experience in the sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have GCSE's in English, Maths and Science (grade D to E or higher/new equivalent grade 2 or higher) or
- be keen and motivated to work in the engineering/manufacturing industry or
- be practically minded and want to work with their hands or
- be willing to undertake a course of training both on-the-job and off-the job and apply this learning in the workplace or
- have completed a Young Apprenticeship or similar in Engineering or other related area or
- have a Welsh Baccalaureate (Welsh applicants) or
- have completed tests in basic numeracy, literacy and communications skills and have spatial awareness.

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

Particular interest would be shown to those applicants who have had previous work experience or employment in the sector.

Progression routes from this pathway

More generally, most ex-apprentices will start off by carrying out semi-skilled job roles within manufacturing and engineering (see job roles described for the pathway). It is likely that a period of consolidation will be required in these roles before progression can take place.

Most will aspire to a combination of internal promotion within their companies to team leader or supervisor level, while at the same time this affords the opportunity to undertake Further Education qualifications or an Advanced Apprenticeship to upgrade their competence and knowledge to fully skilled status. The Advanced Apprenticeship offers a choice of 14 occupational sub-sectors such as aerospace, automotive, marine, electrical/electronics etc. This gives wide ranging opportunity.

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Level 2, Pathway 6: Materials Processing and Finishing

Description of this pathway

Materials Processing and Finishing (Operator and Semi-skilled) - total minimum credit value = 71 credits

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

- **Competence = 38 minimum credits**
- **Knowledge = 18 minimum credits**
- **Transferable Skills = 15 credits**

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

There are no additional requirements to the general framework entry conditions

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	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					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/9591/X	EAL	38	215	N/A

Knowledge qualifications available to this pathway

K1 - City & Guilds Level 2 Diploma in Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	600/0881/7	City & Guilds	42	360	N/A

K2 - EAL Level 2 Diploma in Engineering Technology					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7595/0	EAL	39	330	N/A

K3 - EAL Level 2 Certificate in Metals Industries Processes

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/7998/0	EAL	18	110	N/A

K4 - Pearson BTEC Level 2 Extended Certificate in Engineering (Specialist: Manufacturing Engineering)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/8270/X	Pearson	30	180	N/A

K5 - EAL Level 2 Certificate in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	601/5670/3	EAL	25	230	N/A

K6 - EAL Level 2 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	601/5669/7	EAL	39	330	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

K1 - K6 provide the underpinning knowledge for C1a

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.

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required, including a broad range of mathematical, scientific and engineering manufacturing principles and processes.

After completing the designated knowledge qualification apprentices should be able to:

- understand health and safety requirements
- be able to communicate in an engineering manufacturing environment
- be able to work effectively in an engineering manufacturing environment
- understand basic engineering manufacturing principles and processes.

Transferable skills (England)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into this pathway

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

More specifically they may:

- have previous employment or work experience in the sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have GCSE's in English, Maths and Science (grade D to E or higher/new equivalent grade 2 or higher) or
- be keen and motivated to work in the engineering/manufacturing industry or
- be practically minded and want to work with their hands or
- be willing to undertake a course of training both on-the-job and off-the job and apply this learning in the workplace or
- have completed a Young Apprenticeship or similar in Engineering or other related area or
- have a Welsh Baccalaureate (Welsh applicants) or
- have completed tests in basic numeracy, literacy and communications skills and have spatial awareness.

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

Particular interest would be shown to those applicants who have had previous work experience or employment in the sector.

Progression routes from this pathway

More generally, most ex-apprentices will start off by carrying out semi-skilled job roles within manufacturing and engineering (see job roles described for the pathway). It is likely that a period of consolidation will be required in these roles before progression can take place.

Most will aspire to a combination of internal promotion within their companies to team leader or supervisor level, while at the same time this affords the opportunity to undertake Further Education qualifications or an Advanced Apprenticeship to upgrade their competence and knowledge to fully skilled status. The Advanced Apprenticeship offers a choice of 14 occupational sub-sectors such as aerospace, automotive, marine, electrical/electronics etc. This gives wide ranging opportunity.

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

<https://nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/manufactureandengineering.aspx>

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Level 2, Pathway 7: Engineering Technical Support

Description of this pathway

Engineering Technical Support (Operator and Semi-skilled) - total minimum credit value = 89 credits

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

- **Competence = 51 minimum credits**
- **Knowledge = 23 minimum credits**
- **Transferable Skills = 15 credits**

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

There are no additional requirements to the general framework entry conditions

Job title(s)	Job role(s)
Production Engineering (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	Provides support for areas of the technical support function including communications software, test tools, performance, capacity planning, and e-commerce technology as required. Works as team member to develop, design and implement technical support systems or to complete specialty functions.
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 gauges and measurement devices in controlled temperature environments to ensure they are accurately calibrated to required standards.

Qualifications

Competence qualifications available to this pathway

C1 - Level 2 NVQ Diploma in Engineering Technical Support					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	501/0372/6	EAL	51	215	N/A
C1b	601/5709/4	ETC Awards Ltd	51	215	N/A

Knowledge qualifications available to this pathway

K1 - City & Guilds Level 2 Diploma in Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	600/0881/7	City & Guilds	42	360	N/A

K2 - EAL Level 2 Diploma in Engineering Technology					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7595/0	EAL	39	330	N/A

K3 - EAL Level 2 Certificate in Engineering Maintenance on Military Vehicles and Equipment

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	600/2116/0	EAL	23	200	N/A

K4 - Pearson BTEC Level 2 Extended Certificate in Engineering (Specialist: Manufacturing Engineering)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/8270/X	Pearson	30	180	N/A

K5 - EAL Level 2 Certificate in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	601/5670/3	EAL	25	230	N/A

K6 - EAL Level 2 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	601/5669/7	EAL	39	330	N/A

K7 - ETCAL Level 2 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	601/6008/1	ETC Awards Ltd	42	360	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

K1 - K7 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.

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required, including a broad range of mathematical, scientific and engineering manufacturing principles and processes.

After completing the designated knowledge qualification apprentices should be able to:

- understand health and safety requirements
- be able to communicate in an engineering manufacturing environment
- be able to work effectively in an engineering manufacturing environment
- understand basic engineering manufacturing principles and processes.

Transferable skills (England)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into this pathway

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

More specifically they may:

- have previous employment or work experience in the sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have GCSE's in English, Maths and Science (grade D to E or higher) or
- be keen and motivated to work in the engineering/manufacturing industry or
- be practically minded and want to work with their hands or
- be willing to undertake a course of training both on-the-job and off-the job and apply this learning in the workplace or
- have completed a Young Apprenticeship or similar in Engineering or other related area or
- have a Welsh Baccalaureate (Welsh applicants) or
- have completed tests in basic numeracy, literacy and communications skills and have spatial awareness.

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

Particular interest would be shown to those applicants who have had previous work experience or employment in the sector.

Progression routes from this pathway

More generally, most ex-apprentices will start off by carrying out semi-skilled job roles within manufacturing and engineering (see job roles described for the pathway). It is likely that a period of consolidation will be required in these roles before progression can take place.

Most will aspire to a combination of internal promotion within their companies to team leader or supervisor level, while at the same time this affords the opportunity to undertake Further Education qualifications or an Advanced Apprenticeship to upgrade their competence and knowledge to fully skilled status. The Advanced Apprenticeship offers a choice of 14 occupational sub-sectors such as aerospace, automotive, marine, electrical/electronics etc. This gives wide ranging opportunity.

To further assist apprentices plan their careers we recommend they visit the following websites:

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nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Level 3

Title for this framework at level 3

Advanced Apprenticeship in Engineering Manufacture (Craft and Technician)

Pathways for the framework at level 3:

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

Level 3, Pathway 1: Aerospace

Description of this pathway

Aerospace (Craft and Technician) (16 years - 24 years) - total minimum credit value = 234 credits

(Only for adult apprentices 25 years and over, or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Aeronautical Engineering, completing Level 3 NVQ Diploma in Aeronautical Engineering - total minimum pathway credit value = 207 credits)

As an option, adult apprentices 25 years and over can complete the Level 3 NVQ Extended Diploma in Aeronautical Engineering

Pathway duration approximately 42 months depending on the qualification and unit options selected

1. Level 3 NVQ Extended Diploma in Aeronautical Engineering - for use with 16-24 year olds only or as an option for 25+

- Competence = 165 credits
- Knowledge = 54 credits
- Transferable Skills = 15 credits

2. Level 3 NVQ Diploma in Aeronautical Engineering - only for use with 25 years and over or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Aeronautical Engineering

- Competence = 138 credits
- Knowledge = 54 credits
- Transferable Skills = 15 credits

Note: This NVQ Diploma qualification is only for adult apprentices 25 years and over or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Aeronautical Engineering, who must be able to demonstrate a practical ability comparable to 3 relevant practical PEO units at Level 2, along with relevant health and safety training.

... Engineering Manufacture (England)
..... level 2
..... Pathway 7

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

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Aeronautical Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/2083/0	EAL	165	441	N/A
C1b	601/0080/1	City & Guilds	165	441	N/A

C2 - *Level 3 NVQ Diploma in Aeronautical Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C2a	600/1037/X	EAL	138	318	N/A
C2b	600/1575/5	City & Guilds	138	318	N/A
C2C	600/1706/5	ETC Awards Ltd	138	318	N/A

Knowledge qualifications available to this pathway

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

K2 - EAL Level 3 Diploma in Engineering Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/1130/9	EAL	78	600	N/A

K3 - Pearson BTEC Level 3 Subsidiary Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/7841/0	Pearson	60	360	N/A

K4 - City & Guilds Level 3 Diploma for On-Aircraft Maintenance - Category A

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	600/1927/X	City & Guilds	72	595	N/A

K5 - City & Guilds Level 3 Diploma in Aircraft Maintenance (Civil Aircraft Electrical and Avionics)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	600/1970/0	City & Guilds	73	585	N/A

K6 - City & Guilds Level 3 Diploma in Aircraft Maintenance (Civil Aircraft Mechanical)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	600/1929/3	City & Guilds	80	655	N/A

K7 - City & Guilds Level 3 Diploma in Aircraft Maintenance (Military Aircraft Mechanical)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	600/1972/4	City & Guilds	79	645	N/A

K8 - City & Guilds Level 3 Diploma in Aircraft Maintenance (Military Aircraft Weapons Maintenance)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	600/1973/6	City & Guilds	80	720	N/A

K9 - City & Guilds Level 3 Diploma in Aircraft Manufacture (Electrical and Avionics Manufacture)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	600/1932/3	City & Guilds	60	475	N/A

K10 - City & Guilds Level 3 Diploma in Aircraft Manufacture (Mechanical Manufacture)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	600/1925/6	City & Guilds	62	490	N/A

K11 - Pearson BTEC Level 3 Diploma in Aeronautical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	500/7799/5	Pearson	120	720	N/A

K12 - City & Guilds Level 3 Diploma in Aircraft Maintenance (Military Aircraft Electricals and Avionics)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	600/1971/2	City & Guilds	72	575	N/A

K13 - Pearson BTEC Level 3 Diploma in Operations and Maintenance Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	500/7315/1	Pearson	120	720	N/A

K14 - City & Guilds Level 3 Diploma in Aeronautical Engineering Survival Equipment Maintenance

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K14a	600/2320/X	City & Guilds	66	570	N/A

K15 - Pearson BTEC Level 3 Extended Diploma in Aircraft Maintenance

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K15a	500/8099/4	Pearson	180	1080	N/A

K16 - Pearson BTEC Level 3 Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K16a	500/7319/9	Pearson	120	720	N/A

K17 - Pearson BTEC Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K17a	500/8154/8	Pearson	120	720	N/A

K18 - Pearson BTEC Level 3 Diploma in Electrical/ Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K18a	500/8098/2	Pearson	120	720	N/A

K19 - Pearson BTEC Level 3 Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K19a	500/7283/3	Pearson	120	720	N/A

K20 - Pearson BTEC Level 4 HNC Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K20a	500/8829/4	Pearson	120	480	N/A

K21 - Pearson BTEC Level 4 HNC Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K21a	500/8824/5	Pearson	120	480	N/A

K22 - Pearson BTEC Level 4 HNC Diploma in Electrical and Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K22a	500/8831/2	Pearson	120	480	N/A

K23 - Pearson BTEC Level 3 Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K23a	500/8165/2	Pearson	180	1080	N/A

K24 - Pearson BTEC Level 4 HNC Diploma in Aeronautical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K24a	500/8992/4	Pearson	120	480	N/A

K25 - Pearson BTEC Level 3 Extended Diploma in Aeronautical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K25a	500/7800/8	Pearson	180	1080	N/A

K26 - Pearson BTEC Level 3 Extended Diploma in Electrical/ Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K26a	500/8097/0	Pearson	180	1080	N/A

K27 - EAL Level 3 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K27a	601/5801/3	EAL	68	525	N/A

K28 - EAL Level 3 Extended Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K28a	601/5802/5	EAL	98	750	N/A

K29 - ETCAL Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K29a	601/6010/X	ETC Awards Ltd	54	480	N/A

K30 - Pearson BTEC Level 3 National Diploma in Aeronautical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K30a	601/7577/1	Pearson	120	720	N/A

K31 - Pearson BTEC Level 3 National Extended Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K31a	601/7584/9	Pearson	60	360	N/A

K32 - Pearson BTEC Level 3 National Foundation Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K32a	601/7591/6	Pearson	90	540	N/A

K33 - Pearson BTEC Level 3 National Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K33a	601/7580/1	Pearson	120	720	N/A

K34 - Pearson BTEC Level 3 National Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K34a	601/7588/6	Pearson	180	1080	N/A

K35 - Pearson BTEC Level 4 Higher National Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K35a	603/0450/9	Pearson	120	480	N/A

K36 - Pearson BTEC Level 4 Higher National Certificate in Aeronautical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K36a	603/0485/6	Pearson	120	480	N/A

K37 - IMI Level 3 Diploma in Vehicle Accident Repair Paint Principles

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K37a	500/9688/6	IMI	83	690	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

***Level 3 NVQ Diploma in Aeronautical Engineering - is only for use by 25 years+ or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Aeronautical Engineering (see below)**

K1 - K37 provide underpinning knowledge for C1a - C1b and C2a - C2c

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

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

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required in the engineering sector, including a broad range of mathematical, scientific and engineering/manufacturing principles and processes.

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.

***Note:** The Level 3 NVQ Diploma in Aeronautical Engineering may only be used by adult apprentices 25 years old and over, or apprentices 16-24 years who have Level 2 NVQ Diploma

in Aeronautical Engineering, who must:

a) have received appropriate health and safety training relevant to work area/environment that they will be working

and

b) have worked in an engineering or manufacturing environment and have skills knowledge and understanding broadly comparable to relevant practical NVQ Level 2 units detailed in Performing Engineering Operations, Performing Manufacturing Operations or other skill specific NVQ Level 2 in engineering or manufacturing.

The above must be evidenced by a signed letter from the Apprentices Company and sent prior to the commencement of training to:

Standards and Frameworks Manager, Semta, Unit 2 The Orient Centre, Greycaine Road, Watford, Herts, WD24 7GP or frameworks@semta.org.uk

Transferable skills (England)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into this pathway

Entrants to this pathway are likely to primarily be school leavers who have completed their GCSE studies and in some cases relevant vocational activity such as Pre-Apprenticeship programme or extended work experience.

More specifically they may:

- have GCSEs in English, Maths and Science - grade C/new equivalent grade 4 or above or
- have A or AS levels in Science, Technology, Engineering or Mathematics subjects or
- have a Welsh Baccalaureate (Welsh applicants) or
- have completed an Intermediate Engineering Apprenticeship (preferably in Engineering Manufacture or Improving Operational Performance) or
- have previous work experience or employment in the engineering or manufacturing sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have completed a Young Apprenticeship in Engineering or other related area or
- be willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- be keen and motivated to work in an aerospace engineering environment

Note: Applicants wishing to undertake a BTEC Level 4 HNC Diploma underpinning knowledge qualification should already have achieved a Technical Certificate at Level 3, A Levels or equivalent in the relevant subject area and be age 18+ (as specified by the qualifications entry on RITS).

Progression from this pathway for those who complete an Advanced Engineering Manufacture - Aerospace Apprenticeship

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

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/job-family/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

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

Description of this pathway

Marine (Ship building, maintenance and repair) (Craft and Technician) - total minimum credit value = 185 credits

Pathway duration approximately 42 months depending on the qualification and unit options selected

- **Competence = 142 minimum credits**
- **Knowledge = 28 minimum credits**
- **Transferable Skills = 15 credits**

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

There are no additional requirements to the general framework requirements

Job title(s)	Job role(s)
Marine Fabricator/Welder	Fabrication and welding of thick plate for ship modules / sub-assemblies
Marine Electrical Fitter	Installation, maintenance and repair of electrical equipment and associated systems
Marine Pipe Fitter	Fabricate, weld, and install pipe systems within marine applications
Marine Engine Fitter	Installation, maintenance and repair of large marine propulsion systems
Marine Mechanical Fitter	Installation, maintenance and repair of marine mechanical equipment
Marine Electronics Technician	Installation, maintenance and repair of marine electronic equipment associated with power, propulsion, control, navigation and communications
Specialist Welder (Submarines)	Welding of specialist steels (Q1N) for submarine pressure hulls
Marine Machinist	Operation of machine tools both CNC and manual to fabricate or repair marine equipment
Marine Carpenter	Reads specifications to determine dimensions of wooden fittings in ships or boats. Shapes and laminates wood to form parts of ship, using steam chambers, clamps, glue, and jigs. Repairs structural woodwork and replaces defective parts and equipment, using hand tools and power tools

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Marine Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1764/8	EAL	142	424	N/A

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Engineering Technology

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

K2 - City & Guilds Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	600/0882/9	City & Guilds	54	480	N/A

K3 - Pearson BTEC Level 3 Subsidiary Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/7841/0	Pearson	60	360	N/A

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

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

K5 - Pearson BTEC Level 3 Diploma in Electrical/ Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/8098/2	Pearson	120	720	N/A

K6 - Pearson BTEC Level 3 Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	500/7283/3	Pearson	120	720	N/A

K7 - Pearson BTEC Level 3 Diploma in Engineering

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

K8 - Pearson BTEC Level 4 HNC Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	500/8824/5	Pearson	120	480	N/A

K9 - Pearson BTEC Level 4 HNC Diploma in Electrical and Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	500/8831/2	Pearson	120	480	N/A

K10 - EAL Level 3 Certificate in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	601/5800/1	EAL	28	225	N/A

K11 - EAL Level 3 Subsidiary Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	601/5799/9	EAL	48	375	N/A

K12 - EAL Level 3 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	601/5801/3	EAL	68	525	N/A

K13 - Pearson BTEC Level 3 National Extended Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	601/7584/9	Pearson	60	360	N/A

K14 - Pearson BTEC Level 3 National Foundation Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K14a	601/7591/6	Pearson	90	540	N/A

K15 - Pearson BTEC Level 3 National Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K15a	601/7580/1	Pearson	120	720	N/A

K16 - Pearson BTEC Level 4 Higher National Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K16a	603/0450/9	Pearson	120	480	N/A

Combined qualifications available to this pathway

Relationship between competence and knowledge qualifications

K1 - K16 provide underpinning knowledge for C1a

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

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

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required in the engineering sector, including a broad range of mathematical, scientific and engineering/manufacturing principles and processes.

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)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into this pathway

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

More specifically they may:

- have GCSEs in English, Maths and Science at grade C/new equivalent grade 4 or above or
- have a Welsh Baccalaureate (Welsh applicants) or
- have A or AS levels in Science, Technology, Engineering or Mathematics subjects or
- have completed an Intermediate Engineering Apprenticeship (preferably in Engineering Manufacture or Improving Operational Performance) or
- have previous work experience or employment in the marine sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have completed a Young Apprenticeship in Engineering or other related area or
- be willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- be keen and motivated to work in a marine engineering environment

Note: Applicants wishing to undertake a BTEC Level 4 HNC Diploma underpinning knowledge qualification should already have achieved a Technical Certificate at Level 3, A Levels or equivalent in the relevant subject area and be age 18+ (as specified by the qualifications entry on RITS).

Progression from this pathway for those who complete an Advanced Engineering Manufacture - Marine (Ship building, maintenance and repair) Apprenticeship

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

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Level 3, Pathway 3: Mechanical Manufacturing Engineering

Description of this pathway

Mechanical Manufacturing Engineering (Craft and Technician) - total minimum credit value = 149 credits

Pathway duration approximately 42 months depending on the qualification and unit options selected

- **Competence = 106 credits**
- **Knowledge = 28**
- **Transferable Skills = 15 credits**

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

There are no additional requirements to the general framework entry requirements

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

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Mechanical Manufacturing Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1701/6	EAL	106	439	N/A
C1b	601/0081/3	City & Guilds	106	439	N/A
C1c	601/2548/2	Pearson	106	439	N/A

Knowledge qualifications available to this pathway

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

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

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

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

K4 - City & Guilds Level 3 Diploma in Engineering

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

K5 - Pearson BTEC Level 3 Subsidiary Diploma in Engineering

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

K6 - Pearson BTEC Level 3 Diploma in Engineering

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

K7 - Pearson BTEC Level 3 Diploma in Mechanical Engineering

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

K8 - Pearson BTEC Level 3 Diploma in Manufacturing Engineering

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

K9 - Pearson BTEC Level 3 Diploma in Aeronautical Engineering

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

K10 - Pearson BTEC Level 3 Diploma in Operations and Maintenance Engineering

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

K11 - City & Guilds Level 3 Diploma in Marine Construction, Systems Engineering and Maintenance

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	600/2306/5	City & Guilds	49	450	N/A

K12 - Pearson BTEC Level 3 Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	500/8165/2	Pearson	180	1080	N/A

K13 - EAL Level 3 Diploma in Maintenance Engineering Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	501/1112/7	EAL	78	600	N/A

K14 - Pearson BTEC Level 4 HNC Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K14a	500/8829/4	Pearson	120	480	N/A

K15 - Pearson BTEC Level 4 HNC Diploma in General Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K15a	500/8827/0	Pearson	120	480	N/A

K16 - Pearson BTEC Level 4 HNC Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K16a	500/8824/5	Pearson	120	480	N/A

K17 - Pearson BTEC Level 3 Extended Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K17a	500/7314/X	Pearson	180	1080	N/A

K18 - Pearson BTEC Level 3 90-credit Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K18a	600/3888/3	Pearson	90	540	N/A

K19 - EAL Level 3 Diploma in Cycle Maintenance

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K19a	501/0988/1	EAL	37	260	N/A

K20 - Pearson BTEC Level 3 Extended Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K20a	500/7296/1	Pearson	180	1080	N/A

K21 - Pearson BTEC Level 3 Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K21a	500/8156/1	Pearson	30	180	N/A

K22 - EAL Level 3 Certificate in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K22a	601/5800/1	EAL	28	225	N/A

K23 - EAL Level 3 Subsidiary Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K23a	601/5799/9	EAL	48	375	N/A

K24 - EAL Level 3 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K24a	601/5801/3	EAL	68	525	N/A

K25 - ETCAL Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K25a	601/6010/X	ETC Awards Ltd	54	480	N/A

K26 - ETCAL Level 3 Diploma in Engineering Principles

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K26a	601/7373/7	ETC Awards Ltd	70	370	N/A

K27 - EAL Level 3 Extended Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K27a	601/5802/5	EAL	98	750	N/A

K28 - City & Guilds Level 3 Advanced Technical Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K28a	601/4506/7	City & Guilds	120	720	N/A

K29 - Pearson BTEC Level 3 National Extended Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K29a	601/7584/9	Pearson	60	360	N/A

K30 - Pearson BTEC Level 3 National Foundation Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K30a	601/7591/6	Pearson	90	540	N/A

K31 - Pearson BTEC Level 3 National Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K31a	601/7580/1	Pearson	120	720	N/A

K32 - Pearson BTEC Level 3 National Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K32a	601/7588/6	Pearson	180	1080	N/A

K33 - Pearson BTEC Level 4 Higher National Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K33a	603/0450/9	Pearson	120	480	N/A

K34 - HNC Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K34a	N/A	University of Northampton	160	N/A	N/A

K35 - Pearson BTEC Level 3 Diploma in Aerospace and Aviation Engineering (Development Technical Knowledge)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K35a	601/9063/2	Pearson	98	720	N/A

K36 - Pearson BTEC Level 3 Diploma in Advanced Manufacturing Engineering (Development Technical Knowledge)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K36a	601/9054/1	Pearson	120	720	N/A

K37 - EAL Level 3 Diploma in Machining (Development Knowledge)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K37a	603/1033/9	EAL	78	585	N/A

K38 - EAL Level 3 Diploma in Advanced Manufacturing Engineering (Development Knowledge)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K38a	603/1353/5	EAL	N/A	750	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

K1 - K38 provide underpinning knowledge for C1a - C1c

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

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

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required in the engineering sector, including a broad range of mathematical, scientific and engineering/manufacturing principles and processes.

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)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into this pathway

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

More specifically they may:

- have GCSEs in English, Maths and Science at grade C/new equivalent grade 4 or above or
- have a Welsh Baccalaureate (Welsh applicants) or
- have A or AS levels in Science, Technology, Engineering or Mathematics subjects or
- have completed an Intermediate Engineering Apprenticeship (preferably in Engineering Manufacture or Improving Operational Performance) or
- have previous work experience or employment in the mechanical manufacturing sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have completed a Young Apprenticeship in Engineering or other related area or
- be willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- be keen and motivated to work in a mechanical manufacturing engineering environment

Note: Applicants wishing to undertake a BTEC Level 4 HNC Diploma underpinning knowledge qualification should already have achieved a Technical Certificate at Level 3, A Levels or equivalent in the relevant subject area and be age 18+ (as specified by the qualifications entry on RITS).

Progression from this pathway for those who complete an Advanced Engineering Manufacture - Mechanical Manufacturing Engineering Apprenticeship

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

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/job-family/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

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

Description of this pathway

Marine (Yacht and Boat building, maintenance and repair) (Craft and Technician) - total minimum credit value = 178 credits

Pathway duration approximately 42 months depending on the qualification and unit options selected

- **Competence = 115 credits**
- **Knowledge = 48 credits**
- **Transferable Skills = 15 credits**

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

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

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

Qualifications

Competence qualifications available to this pathway

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

Knowledge qualifications available to this pathway

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

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

K3 - Pearson BTEC Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/8154/8	Pearson	120	720	N/A

K4 - Pearson BTEC Level 4 HNC Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/8824/5	Pearson	120	480	N/A

K5 - Pearson BTEC Level 4 HNC Diploma in Electrical and Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/8831/2	Pearson	120	480	N/A

K6 - EAL Level 3 Subsidiary Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	601/5799/9	EAL	48	375	N/A

K7 - EAL Level 3 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	601/5801/3	EAL	68	525	N/A

K8 - Pearson BTEC Level 3 National Extended Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	601/7584/9	Pearson	60	360	N/A

K9 - Pearson BTEC Level 3 National Foundation Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	601/7591/6	Pearson	90	540	N/A

K10 - Pearson BTEC Level 3 National Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	601/7580/1	Pearson	120	720	N/A

K11 - Pearson BTEC Level 4 Higher National Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	603/0450/9	Pearson	120	480	N/A

K12 - City and Guilds Level 3 Diploma in Engineering (Electrical & Electronic Engineering)

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

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

K1 - K12 provide underpinning knowledge for C1a - C1b

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

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required in the engineering sector, including a broad range of mathematical, scientific and engineering/manufacturing principles and processes.

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)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into this pathway

Entrants to this pathway may be school leavers who have completed their GCSE studies, and in some cases relevant vocational activity such as a Pre-Apprenticeship programme or extended work experience. Other entrants may have experience from working in the sector, and are now seeking to become qualified by undertaking an apprenticeship programme.

More specifically they may:

- have GCSEs in English, Maths and Science at grade C/new equivalent grade 4 or above or
- have a Welsh Baccalaureate (Welsh applicants) or
- have A or AS levels in Science, Technology, Engineering or Mathematics subjects or
- have completed an Intermediate Engineering Apprenticeship (preferably in Engineering Manufacture or Improving Operational Performance) or
- have previous work experience or employment in the marine sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have completed a Young Apprenticeship in Engineering or other related area or
- be willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- be keen and motivated to work in a marine engineering environment

Note: Applicants wishing to undertake a BTEC Level 4 HNC Diploma underpinning knowledge qualification should already have achieved a Technical Certificate at Level 3, A Levels or equivalent in the relevant subject area and be age 18+ (as specified by the qualifications entry on RITS).

Progression from this pathway for those who complete an Advanced Engineering Manufacture - Marine (Yacht and Boat building, maintenance and repair) Apprenticeship

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

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Level 3, Pathway 5: Engineering Maintenance

Description of this pathway

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

Pathway duration approximately 42 months depending on the qualification and unit options selected

- **Competence = 179 credits**
- **Knowledge = 23 minimum credits**
- **Transferable Skills = 15 credits**

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

There are no additional requirements to the general framework entry requirements

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

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Engineering Maintenance					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/2084/2	EAL	179	426	N/A
C1b	601/0079/5	City & Guilds	179	426	N/A
C1c	601/2543/3		179	426	N/A

C2 - Level 3 NVQ Extended Diploma in Engineering Maintenance (Servicing Medical Equipment)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	601/8762/1	Open College Network West Midlands	186	532	N/A

Knowledge qualifications available to this pathway

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

K2 - EAL Level 3 Diploma in Cycle Maintenance

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/0988/1	EAL	37	260	N/A

K3 - EAL Level 3 Diploma in Engineering Technology

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

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

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

K5 - Pearson BTEC Level 3 Subsidiary Diploma in Engineering

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

K6 - EAL Level 3 Diploma in Equipment Maintenance Engineering

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

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

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

K8 - Pearson BTEC Level 3 Diploma in Operations and Maintenance Engineering

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

K9 - Pearson BTEC Level 3 Diploma in Electrical / Electronic Engineering

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

K10 - Pearson BTEC Level 3 Diploma in Engineering

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

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

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

K12 - City & Guilds Level 3 Diploma in Engineering

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

K13 - Pearson BTEC Level 3 Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	500/8165/2	Pearson	180	1080	N/A

K14 - Pearson BTEC Level 3 Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K14a	500/7283/3	Pearson	120	720	N/A

K15 - City & Guilds Level 3 Diploma in Engineering - Weapons Engineering Maintenance

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K15a	600/3166/9	City & Guilds	65	573	N/A

K16 - Pearson BTEC Level 3 Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K16a	500/7319/9	Pearson	120	720	N/A

K17 - City & Guilds Level 3 Diploma in Engineering - Marine

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K17a	600/2483/5	City & Guilds	94	863	N/A

K18 - Pearson BTEC Level 4 HNC Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K18a	500/8829/4	Pearson	120	480	N/A

K19 - Pearson BTEC Level 4 HNC Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K19a	500/8824/5	Pearson	120	480	N/A

K20 - Pearson BTEC Level 4 HNC Diploma in Electrical and Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K20a	500/8831/2	Pearson	120	480	N/A

K21 - Pearson BTEC Level 3 Extended Diploma in Electrical/ Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K21a	500/8097/0	Pearson	180	1080	N/A

K22 - Pearson BTEC Level 3 Extended Diploma in Operations and Maintenance

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K22a	500/7317/5	Pearson	180	1080	N/A

K23 - Pearson BTEC Level 3 90-credit Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K23a	600/3888/3	Pearson	90	540	N/A

K24 - City & Guilds Level 3 Diploma for On-Aircraft Maintenance - Category A

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K24a	600/1927/X	City & Guilds	72	595	N/A

K25 - City & Guilds Level 3 Diploma in Engineering - Military Vehicles

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K25a	600/4204/7	City & Guilds	68	573	N/A

K26 - City & Guilds Level 3 Diploma in Engineering - Armourers

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K26a	600/4203/5	City & Guilds	46	403	N/A

K27 - Pearson BTEC Level 3 Extended Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K27a	500/7296/1	Pearson	180	1080	N/A

K28 - EAL Level 3 Certificate in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K28a	601/5800/1	EAL	28	225	N/A

K29 - EAL Level 3 Subsidiary Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K29a	601/5799/9	EAL	48	375	N/A

K30 - EAL Level 3 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K30a	601/5801/3	EAL	68	525	N/A

K31 - EAL Level 3 Extended Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K31a	601/5802/5	EAL	98	750	N/A

K32 - ETCAL Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K32a	601/6010/X	ETC Awards Ltd	54	480	N/A

K33 - AQA Level 3 Technical Level Engineering: Mechatronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K33a	601/7080/3	AQA	72	720	N/A

K34 - Pearson BTEC Level 3 National Extended Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K34a	601/7584/9	Pearson	60	360	N/A

K35 - Pearson BTEC Level 3 National Foundation Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K35a	601/7591/6	Pearson	90	540	N/A

K36 - Pearson BTEC Level 3 National Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K36a	601/7580/1	Pearson	120	720	N/A

K37 - Pearson BTEC Level 3 National Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K37a	601/7588/6	Pearson	180	1080	N/A

K38 - Open College Network West Midlands Level 3 Certificate in Principles of Servicing Medical Equipment

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K38a	601/8764/5	Open College Network West Midlands	23	186	N/A

K39 - EAL Level 3 Diploma in Electrical and Electronic Engineering Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K39a	501/1121/8	EAL	78	600	N/A

K40 - Pearson BTEC Level 4 Higher National Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K40a	603/0450/9	Pearson	120	480	N/A

K41 - HNC Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K41a	N/A	University of Northampton	160	N/A	N/A

K42 - Pearson BTEC Level 3 Diploma in Advanced Manufacturing Engineering (Development Technical Knowledge)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K42a	601/9054/1	Pearson	120	720	N/A

K43 - EAL Level 3 Diploma in Machining (development Knowledge)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K43a	603/1033/9	EAL	78	585	N/A

K44 - EAL Level 3 Diploma in Advanced Manufacturing Engineering (Development Knowledge)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K44a	603/1353/5	EAL	N/A	750	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

K1 - K37 & K39 - K44 provide underpinning knowledge for C1a - C1c

K38 provides underpinning knowledge for C2a

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

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

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required in the engineering sector, including a broad range of mathematical, scientific and engineering/manufacturing principles and processes.

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)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into this pathway

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

More specifically they may:

- have GCSEs in English, Maths and Science at grade C/new equivalent grade 4 or above or
- have a Welsh Baccalaureate (Welsh applicants) or
- have A or AS levels in Science, Technology, Engineering or Mathematics subjects or
- have completed an Intermediate Engineering Apprenticeship (preferably in Engineering Manufacture or Improving Operational Performance) or
- have previous work experience or employment in the engineering sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have completed a Young Apprenticeship in Engineering or other related area or
- be willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- be keen and motivated to work in an engineering maintenance environment

Note: Applicants wishing to undertake a BTEC Level 4 HNC Diploma underpinning knowledge qualification should already have achieved a Technical Certificate at Level 3, A Levels or equivalent in the relevant subject area and be age 18+ (as specified by the qualifications entry on RITS).

Progression from this pathway for those who complete an Advanced Engineering Manufacture -Engineering Maintenance Apprenticeship

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

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website:

acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Level 3, Pathway 6: Fabrication and Welding

Description of this pathway

Fabrication and Welding (Craft and Technician) - total minimum credit value = 194 credits

Pathway duration approximately 42 months depending on the qualification and unit options selected

- **Competence = 151 minimum credits**
- **Knowledge = 28 minimum credits**
- **Transferable Skills = 15 credits**

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

There are no additional requirements to the general framework entry requirements

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

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Fabrication and Welding					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/9932/X	EAL	151	516	N/A
C1b	601/0083/7	City & Guilds	151	516	N/A

Knowledge qualifications available to this pathway

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

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

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

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

K4 - City & Guilds Level 3 Diploma in Engineering

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

K5 - Pearson BTEC Level 3 Subsidiary Diploma in Engineering

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

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

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

K7 - Pearson BTEC Level 3 Diploma in Engineering

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

K8 - Pearson BTEC Level 3 Diploma in Manufacturing Engineering

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

K9 - Pearson BTEC Level 3 Diploma in Operations and Maintenance Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	500/7315/1	Pearson	120	720	N/A

K10 - Pearson BTEC Level 3 Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	500/7283/3	Pearson	120	720	N/A

K11 - Pearson BTEC Level 4 HNC Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	500/8829/4	Pearson	120	480	N/A

K12 - Pearson BTEC Level 4 HNC Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	500/8824/5	Pearson	120	480	N/A

K13 - Pearson BTEC Level 3 90-credit Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	600/3888/3	Pearson	90	540	N/A

K14 - Skills and Education Group Awards Level 3 Diploma in Fabrication and Welding Practice

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K14a	600/5130/9	Skills and Education Group Awards	57	480	N/A

K15 - Skills and Education Group Awards Level 3 Certificate in Fabrication and Welding Practice

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K15a	600/5194/2	Skills and Education Group Awards	29	240	N/A

K16 - EAL Level 3 Certificate in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K16a	601/5800/1	EAL	28	225	N/A

K17 - EAL Level 3 Subsidiary Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K17a	601/5799/9	EAL	48	375	N/A

K18 - EAL Level 3 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K18a	601/5801/3	EAL	68	525	N/A

K19 - ETCAL Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K19a	601/6010/X	ETC Awards Ltd	54	480	N/A

K20 - ETCAL Level 3 Diploma in Engineering Principles

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K20a	601/7373/7	ETC Awards Ltd	70	370	N/A

K21 - EAL Level 3 Extended Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K21a	601/5802/5	EAL	98	750	N/A

K22 - Pearson BTEC Level 3 National Extended Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K22a	601/7584/9	Pearson	60	360	N/A

K23 - Pearson BTEC Level 3 National Foundation Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K23a	601/7591/6	Pearson	90	540	N/A

K24 - Pearson BTEC Level 3 National Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K24a	601/7580/1	Pearson	120	720	N/A

K25 - Pearson BTEC Level 4 Higher National Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K25a	603/0450/9	Pearson	120	480	N/A

K26 - Skills and Education Group Awards Level 3 Certificate in Fabrication and Welding Practice

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K26a	603/2258/5	Skills and Education Group Awards	29	230	N/A

K27 - Skills and Education Group Awards Level 3 Diploma in Fabrication and Welding Practice

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K27a	603/2259/7	Skills and Education Group Awards	50	440	N/A

K28 - Pearson BTEC Level 3 Diploma in Advanced Manufacturing Engineering (Development Technical Knowledge)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K28a	601/9054/1	Pearson	120	720	N/A

K29 - EAL Level 3 Diploma in Advanced Manufacturing Engineering (Development Knowledge)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K29a	603/1353/5	EAL	N/A	750	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

K1 - K29 provide underpinning knowledge for C1a - C1b

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

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

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required in the engineering sector, including a broad range of mathematical, scientific and engineering/manufacturing principles and processes.

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)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into this pathway

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

More specifically they may:

- have GCSEs in English, Maths and Science at grade C/new equivalent grade 4 or above or
- have a Welsh Baccaulaureate (Welsh applicants) or
- have A or AS levels in Science, Technology, Engineering or Mathematics subjects or
- have completed an Intermediate Engineering Apprenticeship (preferably in Engineering Manufacture or Improving Operational Performance) or
- have previous work experience or employment in the mechanical manufacturing/fabrication and welding sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have completed a Young Apprenticeship in Engineering or other related area or
- be willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- be keen and motivated to work in a fabrication and welding environment

Note: Applicants wishing to undertake a BTEC Level 4 HNC Diploma underpinning knowledge qualification should already have achieved a Technical Certificate at Level 3, A Levels or equivalent in the relevant subject area and be age 18+ (as specified by the qualifications entry on RITS).

Progression from this pathway for those who complete an Advanced Engineering Manufacture- Fabrication and Welding Apprenticeship

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

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. Pearson have produced a Level 3 stand-alone qualification that can cover all 9 outcomes of ERR requirements if Units 2 and 4 are achieved.

Qualification details:

Pearson BTEC Level 3 Award in WorkSkills for Effective Learning and Employment 501/1791/9

Credit value: 4 credits

Guided learning hours: 40

The Pearson BTEC Level 3 Award consists of a mandatory unit as an introduction to apprenticeships. Apprentices **must then complete Units 2 and 4** which cover the ERR requirements (included within content). This qualification is designed to be assessed in the context of the sector relevant to the apprenticeship framework being undertaken (i.e. manufacturing/engineering in this case).

This qualification expires on 30/04/2018 and will no longer be available to new starts from 01/05/2018

Please note: Only Level 2 is required to meet the framework requirements.

1d. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR

requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fiss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Level 3, Pathway 7: Materials Processing and Finishing

Description of this pathway

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

Pathway duration approximately 42 months depending on the qualification and unit options selected

- **Competence = 122 minimum credits**
- **Knowledge = 54 minimum credits**
- **Transferable Skills = 15 credits**

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

There are no additional requirements to the general framework entry requirements

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

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Materials Processing and Finishing					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/9592/1	EAL	122	432	N/A

Knowledge qualifications available to this pathway

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

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

K3 - Pearson BTEC Level 3 Subsidiary Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/7841/0	Pearson	60	360	N/A

K4 - Pearson BTEC Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/8154/8	Pearson	120	720	N/A

K5 - Pearson BTEC Level 3 Diploma in Aeronautical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/7799/5	Pearson	120	720	N/A

K6 - Pearson BTEC Level 3 Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	500/7319/9	Pearson	120	720	N/A

K7 - City & Guilds Level 3 Diploma in Engineering

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

K8 - Pearson BTEC Level 4 HNC Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	500/8824/5	Pearson	120	480	N/A

K9 - EAL Level 3 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	601/5801/3	EAL	68	525	N/A

K10 - EAL Level 3 Extended Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	601/5802/5	EAL	98	750	N/A

K11 - Pearson BTEC Level 3 Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	500/7283/3	Pearson	120	720	N/A

K12 - Pearson BTEC Level 3 National Extended Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	601/7584/9	Pearson	60	360	N/A

K13 - Pearson BTEC Level 3 National Foundation Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	601/7591/6	Pearson	90	540	N/A

K14 - Pearson BTEC Level 3 National Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K14a	601/7580/1	Pearson	120	720	N/A

K15 - Pearson BTEC Level 4 Higher National Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K15a	603/0450/9	Pearson	120	480	N/A

K16 - HNC Mechanical Production Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K16a	N/A	University of Central Lancashire (UCLan)	160	N/A	N/A

K17 - HNC Electrical & Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K17a	N/A	University of Central Lancashire (UCLan)	160	N/A	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

K1 - K17 provide underpinning knowledge for C1a

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

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

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required in the engineering sector, including a broad range of mathematical, scientific and engineering/manufacturing principles and processes.

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)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into this pathway

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

More specifically they may:

- have GCSEs in English, Maths and Science at grade C or above or
- have a Welsh Baccalaureate (Welsh applicants) or
- have A or AS levels in Science, Technology, Engineering or Mathematics subjects or
- have completed an Intermediate Engineering Apprenticeship (preferably in Engineering Manufacture or Improving Operational Performance) or
- have previous work experience or employment in the manufacturing sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have completed a Young Apprenticeship in Engineering or other related area or
- be willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- be keen and motivated to work in a materials processing and manufacturing environment

Note: Applicants wishing to undertake a BTEC Level 4 HNC Diploma underpinning knowledge qualification should already have achieved a Technical Certificate at Level 3, A Levels or equivalent in the relevant subject area and be age 18+ (as specified by the qualifications entry on RITS).

Progression from this pathway for those who complete an Advanced Engineering Manufacture - Materials Processing and Finishing Apprenticeship

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

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Level 3, Pathway 8: Engineering Technical Support

Description of this pathway

Engineering Technical Support (Craft and Technician) - total minimum credit value = 188 credits

(Only for adult apprentices 25 years and over, or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Engineering Technical Support, completing Level 3 NVQ Diploma in Engineering Technical Support - total minimum pathway credit value = 133 credits)

As an option, adult apprentices 25 years and over can complete the Level 3 NVQ Extended Diploma in Engineering Technical Support

Pathway duration approximately 42 months depending on the qualification and unit options selected

1. Level 3 NVQ Extended Diploma in Engineering Technical Support - for use with 16-24 year olds only or as an option for 25+

- Competence = 150 credits
- Knowledge = 23 credits
- Transferable Skills = 15 credits

2. Level 3 NVQ Diploma in Engineering Technical Support - only for use with 25 years and over or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Engineering Technical Support

- Competence = 123 credits
- Knowledge = 23 credits
- Transferable Skills = 15 credits

Note: This NVQ Diploma qualification is only for adult apprentices 25 years and over or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Engineering Technical Support, who must be able to demonstrate a practical ability comparable to 3 relevant practical PEO units at Level 2, along with relevant health and safety training.

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

There are no additional requirements to the general framework entry requirements

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

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Engineering Technical Support

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/9794/2	EAL	150	426	N/A
C1b	601/0082/5	City & Guilds	150	426	N/A

C2 - *Level 3 NVQ Diploma in Engineering Technical Support

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C2a	600/9793/0	EAL	123	311	N/A
C2b	601/1821/0	ETC Awards Ltd	123	311	N/A
C2c	600/2085/4	City & Guilds	123	311	N/A

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Engineering Technology

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

K2 - City & Guilds Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	600/0882/9	City & Guilds	54	480	N/A

K3 - Pearson BTEC Level 3 Subsidiary Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/7841/0	Pearson	60	360	N/A

K4 - Pearson BTEC Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/8154/8	Pearson	120	720	N/A

K5 - Pearson BTEC Level 3 Diploma in Operations and Maintenance Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/7315/1	Pearson	120	720	N/A

K6 - Pearson BTEC Level 3 Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	500/7283/3	Pearson	120	720	N/A

K7 - Pearson BTEC Level 3 Diploma in Electrical/ Electronic Engineering

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

K8 - Pearson BTEC Level 3 Diploma in Manufacturing Engineering

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

K9 - Pearson BTEC Level 3 Diploma in Aeronautical Engineering

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

K10 - Pearson BTEC Level 3 Diploma in Construction and the Built Environment

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	500/7137/3	Pearson	120	720	N/A

K11 - EAL Level 3 Diploma in Mechanical Engineering Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	501/1155/3	EAL	78	600	N/A

K12 - EAL Level 3 Diploma in Maintenance Engineering Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	501/1112/7	EAL	78	600	N/A

K13 - EAL Level 3 Certificate in Engineering Maintenance on Military Vehicles and Equipment

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	600/2119/6	EAL	23	180	N/A

K14 - Pearson BTEC Level 4 HNC Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K14a	500/8829/4	Pearson	120	480	N/A

K15 - Pearson BTEC Level 4 HNC Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K15a	500/8824/5	Pearson	120	480	N/A

K16 - Pearson BTEC Level 4 HNC Diploma in Electrical and Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K16a	500/8831/2	Pearson	120	480	N/A

K17 - Pearson BTEC Level 3 Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K17a	500/8165/2	Pearson	180	1080	N/A

K18 - Pearson BTEC Level 3 Extended Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K18a	500/7296/1	Pearson	180	1080	N/A

K19 - City & Guilds Level 3 Diploma in Aircraft Maintenance (Military Aircraft Mechanical)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K19a	600/1972/4	City & Guilds	79	645	N/A

K20 - City & Guilds Level 3 Diploma in Aircraft Maintenance (Military Aircraft Electrical and Avionics)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K20a	600/1971/2	City & Guilds	72	575	N/A

K21 - Pearson BTEC Level 3 Diploma in Business

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K21a	500/6747/3	Pearson	120	720	N/A

K22 - Pearson BTEC Level 3 Extended Diploma in Electrical/ Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K22a	500/8097/0	Pearson	180	1080	N/A

K23 - Pearson BTEC Level 3 Extended Diploma in Aeronautical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K23a	500/7800/8	Pearson	180	1080	N/A

K24 - Pearson BTEC Level 3 90-credit Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K24a	600/3888/3	Pearson	90	540	N/A

K25 - EAL Level 3 Certificate in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K25a	601/5800/1	EAL	28	225	N/A

K26 - EAL Level 3 Subsidiary Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K26a	601/5799/9	EAL	48	375	N/A

K27 - EAL Level 3 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K27a	601/5801/3	EAL	68	525	N/A

K28 - EAL Level 3 Extended Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K28a	601/5802/5	EAL	98	750	N/A

K29 - ETCAL Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K29a	601/6010/X	ETC Awards Ltd	54	480	N/A

K30 - Pearson BTEC Level 4 HNC Diploma in General Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K30a	500/8827/0	Pearson	120	480	N/A

K31 - ETCAL Level 3 Diploma in Engineering Principles

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K31a	601/7373/7	ETC Awards Ltd	70	370	N/A

K32 - Pearson BTEC Level 3 National Extended Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K32a	601/7584/9	Pearson	60	360	N/A

K33 - Pearson BTEC Level 3 National Foundation Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K33a	601/7591/6	Pearson	90	540	N/A

K34 - Pearson BTEC Level 3 National Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K34a	601/7580/1	Pearson	120	720	N/A

K35 - Pearson BTEC Level 3 National Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K35a	601/7588/6	Pearson	180	1080	N/A

K36 - Pearson BTEC Level 4 Higher National Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K36a	603/0450/9	Pearson	120	480	N/A

K37 - HNC Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K37a	N/A	University of Northampton	160	N/A	N/A

K38 - Pearson BTEC Level 3 Diploma in Aerospace and Aviation Engineering (Development Technical Knowledge)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K38a	601/9063/2	Pearson	120	720	N/A

K39 - Pearson BTEC Level 3 Diploma in Advanced Manufacturing Engineering (Development Technical Knowledge)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K39a	601/9054/1	Pearson	120	720	N/A

K40 - EAL Level 3 Diploma in Advanced Manufacturing Engineering (Development Knowledge)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K40a	603/1353/5	EAL	N/A	750	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

***Level 3 NVQ Diploma in Engineering Technical Support - only for use by 25 years+ or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Engineering Technical Support (see below)**

K1 - K40 provide underpinning knowledge for C1a - C1b and C2a - C2c

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

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

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required in the engineering sector, including a broad range of mathematical, scientific and engineering/manufacturing principles and processes.

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.

***Note:** The Level 3 NVQ Diploma in Engineering Technical Support may be used only by adult apprentices 25 years old and over, or apprentices 16-24 years who have achieved Level 2 NVQ

Diploma in Engineering Technical Support, who must:

a) have received appropriate health and safety training relevant to the work area/environment that they will be working in

and

b) have worked in an engineering or manufacturing environment and have skills knowledge and understanding broadly comparable to relevant practical NVQ Level 2 units detailed in Performing Engineering Operations, Performing Manufacturing Operations or other skill specific NVQ Level 2 in engineering or manufacturing.

The above must be evidenced by a signed letter from the Apprentices Company and sent prior to the commencement of training to:

Standards and Frameworks Manager, Semta, Unit 2 The Orient Centre, Greycaine Road, Watford WD24 7GP or frameworks@semta.org.uk

Transferable skills (England)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into this pathway

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

More specifically they may:

- have GCSEs in English, Maths and Science at grade C/new equivalent grade 4 or above or
- have a Welsh Baccalaureate (Welsh applicants) or
- have A or AS levels in Science, Technology, Engineering or Mathematics subjects or
- have completed an Intermediate Engineering Apprenticeship (preferably in Engineering Manufacture or Improving Operational Performance) or
- have previous work experience or employment in the engineering sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have completed a Young Apprenticeship in Engineering or other related area or
- be willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- be keen and motivated to work in an engineering environment

Note: Applicants wishing to undertake a BTEC Level 4 HNC Diploma underpinning knowledge qualification should already have achieved a Technical Certificate at Level 3, A Levels or equivalent in the relevant subject area and be age 18+ (as specified by the qualifications entry on RITS).

Progression from this pathway for those who complete an Advanced Engineering Manufacture - Engineering Technical Support Apprenticeship

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

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Level 3, Pathway 9: Electrical and Electronic Engineering

Description of this pathway

Electrical and Electronic Engineering (Craft and Technician) (16 yrs - 24years) - total minimum credit value = 160 credits

(For adult apprentices 25 years and over only, completing Level 3 NVQ Diploma in Electrical and Electronic Engineering - total minimum pathway credit value = 133 credits)

As an option, adult apprentices 25 years and over can complete the Level 3 NVQ Extended Diploma in Electrical and Electronic Engineering

Pathway duration approximately 42 months depending on the qualification and unit options selected

1. Level 3 NVQ Extended Diploma in Electrical and Electronic Engineering - for use with 16-24 year olds only or as an option for 25+

- Competence = 117 credits
- Knowledge = 28 credits
- Transferable Skills = 15 credits

2. Level 3 NVQ Diploma in Electrical and Electronic Engineering - for use with 25 years and over only

- Competence = 90 credits
- Knowledge = 28 credits
- Transferable Skills = 15 credits

Note: This NVQ Diploma qualification is for adult apprentices 25 years and over only who must be able to demonstrate a practical ability comparable to 3 relevant practical PEO units at Level 2, along with relevant health and safety training

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

There are no additional requirements to the general framework entry requirements

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

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Electrical and Electronic Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/9931/8	EAL	117	425	N/A
C1b	601/2602/4	Pearson	117	425	N/A

C2 - *Level 3 NVQ Diploma in Electrical and Electronic Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C2a	600/9590/8	EAL	90	302	N/A
C2b	601/2587/1	Pearson	90	302	N/A
C2c	601/1661/4	ETC Awards Ltd	90	302	N/A

Knowledge qualifications available to this pathway

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

K2 - EAL Level 3 Diploma in Engineering Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/1130/9	EAL	78	600	N/A

K3 - Pearson BTEC Level 3 Subsidiary Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/7841/0	Pearson	60	360	N/A

K4 - Pearson BTEC Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/8154/8	Pearson	120	720	N/A

K5 - Pearson BTEC Level 3 Diploma in Electrical / Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/8098/2	Pearson	120	720	N/A

K6 - City & Guilds Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	600/0882/9	City & Guilds	54	480	N/A

K7 - Pearson BTEC Level 4 HNC Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	500/8829/4	Pearson	120	480	N/A

K8 - Pearson BTEC Level 4 HNC Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	500/8824/5	Pearson	120	480	N/A

K9 - Pearson BTEC Level 4 HNC Diploma in Electrical and Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	500/8831/2	Pearson	120	480	N/A

K10 - Pearson BTEC Level 4 HNC Diploma in Operations Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	500/8960/2	Pearson	120	480	N/A

K11 - Pearson BTEC Level 4 HNC Diploma in Electrical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	500/8257/7	Pearson	120	480	N/A

K13 - Pearson BTEC Level 3 Diploma in ICT Systems and Principles

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	501/1435/9	Pearson	37	230	N/A

K14 - Pearson BTEC Level 3 Extended Diploma in Electrical/ Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K14a	500/8097/0	Pearson	180	1080	N/A

K15 - Pearson BTEC Level 3 Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K15a	500/8165/2	Pearson	180	1080	N/A

K16 - Pearson BTEC Level 3 Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K16a	500/7319/9	Pearson	120	720	N/A

K17 - Pearson BTEC Level 3 90-credit Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K17a	600/3888/3	Pearson	90	540	N/A

K18 - EAL Level 3 Certificate in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K18a	601/5800/1	EAL	28	225	N/A

K19 - EAL Level 3 Subsidiary Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K19a	601/5799/9	EAL	48	375	N/A

K20 - EAL Level 3 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K20a	601/5801/3	EAL	68	525	N/A

K21 - ETCAL Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K21a	601/6010/X	ETC Awards Ltd	54	480	N/A

K22 - ETCAL Level 3 Diploma in Engineering Principles

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K22a	601/7373/7	ETC Awards Ltd	70	370	N/A

K23 - EAL Level 3 Extended Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K23a	601/5802/5	EAL	98	750	N/A

K24 - Pearson BTEC Level 3 National Extended Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K24a	601/7584/9	Pearson	60	360	N/A

K25 - Pearson BTEC Level 3 National Foundation Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K25a	601/7591/6	Pearson	90	540	N/A

K26 - Pearson BTEC Level 3 National Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K26a	601/7580/1	Pearson	120	720	N/A

K27 - Pearson BTEC Level 3 National Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K27a	601/7588/6	Pearson	180	1080	N/A

K28 - Pearson BTEC Level 4 Higher National Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K28a	603/0450/9	Pearson	120	480	N/A

K29 - HNC Electrical and Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K29a	N/A	University of Plymouth	120	N/A	N/A

K30 - Pearson BTEC Level 3 Diploma in Advanced Manufacturing Engineering (Development Technical Knowledge)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K30a	601/9054/1	Pearson	120	720	N/A

K31 - EAL Level 3 Diploma in Advanced Manufacturing Engineering (Development Knowledge)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K31a	603/1353/5	EAL	N/A	750	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

***Level 3 NVQ Diploma in Electrical and Electronic Engineering - is only for use by 25 years+ or apprentices 16-24 years who have achieved an Intermediate Engineering Manufacture framework in a relevant pathway (see below)**

K1 - K31 provide underpinning knowledge for C1a - C1b and C2a - C2c

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

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

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required in the engineering sector, including a broad range of mathematical, scientific and engineering/manufacturing principles and processes.

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.

***Note:** The Level 3 NVQ Diploma in Electrical and Electronic Engineering may only be used by adult apprentices 25 years old and over, or apprentices 16-24 years who have achieved an

Intermediate Engineering Manufacture framework in a relevant pathway, who must:

a) have received appropriate health and safety training relevant to work area/environment that they will be working

and

b) have worked in an engineering or manufacturing environment and have skills knowledge and understanding broadly comparable to relevant practical NVQ Level 2 units detailed in Performing Engineering Operations, Performing Manufacturing Operations or other skill specific NVQ Level 2 in engineering or manufacturing

The above must be evidenced by a signed letter from the Apprentices Company and sent prior to the commencement of training to:

Standards and Frameworks Manager, Semta, Unit 2 The Orient Centre, Greycaine Road, Watford, Herts, WD24 7GP or frameworks@semta.org.uk

Transferable skills (England)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into this pathway

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

More specifically they may:

- have GCSEs in English, Maths and Science at grade C/new equivalent grade 4 or above or
- have a Welsh Baccalaureate (Welsh applicants) or
- have A or AS levels in Science, Technology, Engineering or Mathematics subjects or
- have completed an Intermediate Engineering Apprenticeship (preferably in Engineering Manufacture or Improving Operational Performance) or
- have previous work experience or employment in the engineering sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have completed a Young Apprenticeship in Engineering or other related area or
- be willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- be keen and motivated to work in an electrical and/or electronics environment

Note: Applicants wishing to undertake a BTEC Level 4 HNC Diploma underpinning knowledge qualification should already have achieved a Technical Certificate at Level 3, A Levels or equivalent in the relevant subject area and be age 18+ (as specified by the qualifications entry on RITS).

Progression from this pathway for those who complete an Advanced Engineering Manufacture - Electrical and Electronic Engineering Apprenticeship

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

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/job-family/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

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

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Level 3, Pathway 10: Installation and Commissioning

Description of this pathway

Installation and Commissioning (Craft and Technician) (16 - 24 years) - total minimum credit value = 237 credits

(Only for adult apprentices 25 years and over, or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Engineering Maintenance and installation, completing Level 3 NVQ Diploma in Installation and Commissioning - total minimum pathway credit value = 210 credits)

As an option, adult apprentices 25 years and over can complete the Level 3 NVQ Extended Diploma in Installation and Commissioning

Pathway duration approximately 42 months depending on the qualification and unit options selected

1. Level 3 NVQ Extended Diploma in Installation and Commissioning - for use with 16-24 year olds only or as an option for 25+

- Competence = 176 credits
- Knowledge = 46 credits
- Transferable Skills = 15 credits

2. Level 3 NVQ Diploma in Installation and Commissioning - only for use with 25 years and over or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Engineering Maintenance and installation

- Competence = 149 credits
- Knowledge = 46 credits
- Transferable Skills = 15 credits

Note: This NVQ Diploma qualification is only for adult apprentices 25 years and over, or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Engineering Maintenance

and installation, who must be able to demonstrate a practical ability comparable to 3 relevant practical PEO units at Level 2, along with relevant health and safety training.

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

There are no additional requirements to the general framework entry requirements

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

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Installation and Commissioning					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1650/4	EAL	176	425	N/A

C2 - *Level 3 NVQ Diploma in Installation and Commissioning					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C2a	601/7649/0	ETC Awards Ltd	149	302	N/A

Knowledge qualifications available to this pathway

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

K2 - Pearson BTEC Level 3 Subsidiary Diploma in Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7841/0	Pearson	60	360	N/A

K3 - City & Guilds Level 3 Diploma in Marine Construction, Systems Engineering and Maintenance

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	600/2306/5	City & Guilds	49	450	N/A

K4 - Pearson BTEC Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/8154/8	Pearson	120	720	N/A

K5 - Pearson BTEC Level 3 Diploma in Operations and Maintenance Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/7315/1	Pearson	120	720	N/A

K6 - EAL Level 3 Diploma in Electrical and Electronic Engineering Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	501/1121/8	EAL	78	600	N/A

K7 - Pearson BTEC Level 3 Diploma in Electrical/ Electronic Engineering

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

K8 - City & Guilds Level 3 Diploma in Engineering - Military Vehicles

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	600/4204/7	City & Guilds	68	573	N/A

K9 - City & Guilds Level 3 Diploma in Engineering - Armourers

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	600/4203/5	City & Guilds	46	403	N/A

K10 - Pearson BTEC Level 4 HNC Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	500/8829/4	Pearson	120	480	N/A

K11 - Pearson BTEC Level 4 HNC Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	500/8824/5	Pearson	120	480	N/A

K12 - Pearson BTEC Level 4 HNC Diploma in Electrical and Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	500/8831/2	Pearson	120	480	N/A

K13 - City & Guilds Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	600/0882/9	City & Guilds	54	480	

K14 - Pearson BTEC Level 3 Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K14a	500/7283/3	Pearson	120	720	N/A

K15 - Pearson BTEC Level 3 Extended Diploma in Electrical/ Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K15a	500/8097/0	Pearson	180	1080	N/A

K16 - Pearson BTEC Level 3 Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K16a	500/8165/2	Pearson	180	1080	N/A

K17 - Pearson BTEC Level 3 Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K17a	500/7319/9	Pearson	120	720	N/A

K18 - EAL Level 3 Subsidiary Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K18a	601/5799/9	EAL	48	375	N/A

K19 - EAL Level 3 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K19a	601/5801/3	EAL	68	525	N/A

K20 - ETCAL Level 3 Diploma in Engineering Principles

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K20a	601/7373/7	ETC Awards Ltd	70	370	N/A

K21 - ETCAL Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K21a	601/6010/X	ETC Awards Ltd	54	480	N/A

K22 - Pearson BTEC Level 3 National Extended Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K22a	601/7584/9	Pearson	60	360	N/A

K23 - Pearson BTEC Level 3 National Foundation Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K23a	601/7591/6	Pearson	90	540	N/A

K24 - Pearson BTEC Level 3 National Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K24a	601/7580/1	Pearson	120	720	N/A

K25 - Pearson BTEC Level 3 National Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K25a	601/7588/6	Pearson	180	1080	N/A

K26 - Pearson BTEC Level 4 Higher National Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K26a	603/0450/9	Pearson	120	480	N/A

K27 - Pearson BTEC Level 3 90-credit Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K27a	600/3888/3	Pearson	90	540	N/A

K28 - Pearson BTEC Level 3 Diploma in Advanced Manufacturing Engineering (Development Technical Knowledge)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K28a	601/9054/1	Pearson	120	720	N/A

K29 - EAL Level 3 Diploma in Advanced Manufacturing Engineering (Development Knowledge)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K29a	603/1353/5	EAL	N/A	750	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

***Level 3 NVQ Diploma in Installation and Commissioning - for use only by 25 years+ or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Engineering Maintenance and installation (see below)**

K1 - K29 provide underpinning knowledge for C1a and C2a

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

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

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required in the engineering sector, including a broad range of mathematical, scientific and engineering/manufacturing principles and processes.

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.

***Note:** The Level 3 NVQ Diploma in Installation and Commissioning may only be used by adult apprentices 25 years old and over, or apprentices 16-24 years who have achieved Level 2 NVQ

Diploma in Engineering Maintenance and installation, who must:

a) have received appropriate health and safety training relevant to work area/environment that they will be working

and

b) have worked in an engineering or manufacturing environment and have skills knowledge and understanding broadly comparable to relevant practical NVQ Level 2 units detailed in Performing Engineering Operations, Performing Manufacturing Operations or other skill specific NVQ Level 2 in engineering or manufacturing.

The above must be evidenced by a signed letter from the Apprentices Company and sent prior to the commencement of training to:

Standards and Frameworks Manager, Semta, Unit 2 The Orient Centre, Greycaine Road, Watford, Herts, WD24 7GP or frameworks@semta.org.uk

Transferable skills (England)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into the pathway

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

More specifically they may:

- have GCSEs in English, Maths and Science at grade C/new equivalent grade 4 or above or
- have a Welsh Baccalaureate (Welsh applicants) or
- have A or AS levels in Science, Technology, Engineering or Mathematics subjects or
- have completed an Intermediate Engineering Apprenticeship (preferably in Engineering Manufacture or Improving Operational Performance) or
- have previous work experience or employment in the engineering sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have completed a Young Apprenticeship in Engineering or other related area or
- be willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- be keen and motivated to work in an installation and commissioning environment

Note: Applicants wishing to undertake a BTEC Level 4 HNC Diploma underpinning knowledge qualification should already have achieved a Technical Certificate at Level 3, A Levels or equivalent in the relevant subject area and be age 18+ (as specified by the qualifications entry on RITS).

Progression from this pathway for those who complete an Advanced Engineering Manufacture - Installation and Commissioning Apprenticeship

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

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/job-family/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Level 3, Pathway 11: Engineering Toolmaking

Description of this pathway

Engineering Toolmaking (Craft and Technician) - total minimum credit value = 201 credits

Pathway duration approximately 42 months depending on the qualification and unit options selected

- **Competence = 132 minimum credits**
- **Knowledge = 54 credits**
- **Transferable Skills = 15 credits**

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

There are no additional requirements other than the general entry conditions

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

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Engineering Toolmaking

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1667/X	EAL	132	439	N/A
C1b	601/2549/4	Pearson	132	439	N/A

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Engineering Technology

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

K2 - EAL Level 3 Diploma in Mechanical Engineering Technology (Progressive)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	501/1422/0	EAL	97	750	N/A

K3 - EAL Level 3 Diploma in Mechanical Engineering Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	501/1155/3	EAL	78	600	N/A

K4 - Pearson BTEC Level 3 Subsidiary Diploma in Engineering

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

K5 - Pearson BTEC Level 3 Diploma in Operations and Maintenance Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/7315/1	Pearson	120	720	N/A

K6 - City & Guilds Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	600/0882/9	City & Guilds	54	480	N/A

K7 - Pearson BTEC Level 3 Diploma in Mechanical Engineering

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

K8 - Pearson BTEC Level 3 Diploma in Manufacturing Engineering

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

K9 - Pearson BTEC Level 3 Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	500/8165/2	Pearson	180	1080	N/A

K10 - Pearson BTEC Level 3 Diploma in Engineering

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

K11 - Pearson BTEC Level 4 HNC Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	500/8829/4	Pearson	120	480	N/A

K12 - Pearson BTEC Level 4 HNC Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	500/8824/5	Pearson	120	480	N/A

K13 - Pearson BTEC Level 3 Extended Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	500/7296/1	Pearson	180	1080	N/A

K14 - EAL Level 3 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K14a	601/5801/3	EAL	68	525	N/A

K15 - ETCAL Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K15a	601/6010/X	ETC Awards Ltd	54	480	N/A

K16 - ETCAL Level 3 Diploma in Engineering Principles

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K16a	601/7373/7	ETC Awards Ltd	70	370	N/A

K17 - EAL Level 3 Extended Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K17a	601/5802/5	EAL	98	750	N/A

K18 - Pearson BTEC Level 3 National Extended Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K18a	601/7584/9	Pearson	60	360	N/A

K19 - Pearson BTEC Level 3 National Foundation Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K19a	601/7591/6	Pearson	90	540	N/A

K20 - Pearson BTEC Level 3 National Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K20a	601/7580/1	Pearson	120	720	N/A

K21 - Pearson BTEC Level 3 National Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K21a	601/7588/6	Pearson	18	1080	N/A

K22 - Pearson BTEC Level 4 Higher National Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K22a	603/0450/9	Pearson	120	480	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

K1 - K22 provide underpinning knowledge for C1a - C1b

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

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

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required in the engineering sector, including a broad range of mathematical, scientific and engineering/manufacturing principles and processes.

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)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into the pathway

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

More specifically they may:

- have GCSEs in English, Maths, and Science at grade C/new equivalent grade 4 or above or
- have a Welsh Baccalaureate (Welsh applicants) or
- have A or AS levels in Science, Technology, Engineering or Mathematics subjects or
- have completed an Intermediate Engineering Apprenticeship (preferably in Engineering Manufacture or Improving Operational Performance) or
- have previous work experience or employment in the engineering sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have completed a Young Apprenticeship in Engineering or other related area or
- be willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- be keen and motivated to work in an engineering environment

Note: Applicants wishing to undertake a BTEC Level 4 HNC Diploma underpinning knowledge qualification should already have achieved a Technical Certificate at Level 3, A Levels or equivalent in the relevant subject area and be age 18+ (as specified by the qualifications entry on RITS).

Progression from this pathway for those who complete an Advanced Engineering Manufacture - Tool-making Apprenticeship

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

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Level 3, Pathway 12: Automotive

Description of this pathway

Automotive (Craft and Technician) - total minimum credit value = 186 credits

(For adult apprentices 25 years and over only completing Level 3 NVQ Diploma in Automotive Engineering - total minimum pathway credit value = 159 credits)

As an option, adult apprentices 25 years and over can complete the Level 3 NVQ Extended Diploma in Automotive Engineering

Pathway duration approximately 42 months depending on the qualification and unit options selected

1. Level 3 NVQ Extended Diploma in Automotive Engineering - for use with 16-24 year olds only or as an option for 25+

- **Competence = 143 minimum credits**
- **Knowledge = 28 credits**
- **Transferable Skills = 15 credits**

2. Level 3 NVQ Diploma in Automotive Engineering - for use with 25 years and over only

Note: This NVQ Diploma qualification is for adult apprentices over 25 years only who must be able to demonstrate a practical ability comparable to 3 relevant practical PEO units at Level 2, along with relevant health and safety training.

- **Competence = 116 credits**
- **Knowledge = 28 credits**
- **Transferable Skills = 15 credits**

... Engineering Manufacture (England)
..... level 3
..... Pathway 11

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

There are no additional requirements to the general framework entry requirements

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

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Extended Diploma in Automotive Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1784/3	EAL	143	432	N/A

C2 - *Level 3 NVQ Diploma in Automotive Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C2a	600/0750/3	EAL	116	309	N/A
C2b	601/4492/0	ETC Awards Ltd	116	309	N/A

Knowledge qualifications available to this pathway

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

K2 - Pearson BTEC Level 3 Diploma in Manufacturing Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7319/9	Pearson	120	720	N/A

K3 - Pearson BTEC Level 3 Subsidiary Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/7841/0	Pearson	60	360	N/A

K4 - Pearson BTEC Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/8154/8	Pearson	120	720	N/A

K5 - Pearson BTEC Level 3 Diploma in Operations and Maintenance Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/7315/1	Pearson	120	720	N/A

K6 - IMI Level 3 Diploma in Motorsport Vehicle Maintenance and Repair

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	600/2579/7	IMI	69	538	N/A

K7 - IMI Level 3 Extended Diploma in Motorsport Vehicle Maintenance and Repair

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	600/2760/5	IMI	90	646	N/A

K8 - Pearson BTEC Level 3 Diploma in Electrical/ Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	500/8098/2	Pearson	120	720	N/A

K9 - Pearson BTEC Level 4 HNC Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	500/8829/4	Pearson	120	480	N/A

K10 - Pearson BTEC Level 4 HNC Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	500/8824/5	Pearson	120	480	N/A

K11 - Pearson BTEC Level 4 HNC Diploma in Automotive Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	500/8601/7	Pearson	120	480	N/A

K12 - Pearson BTEC Level 4 HNC Diploma in Electrical and Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	500/8831/2	Pearson	120	480	N/A

K13 - Pearson BTEC Level 3 Subsidiary Diploma in Vehicle Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	600/4344/1	Pearson	60	360	N/A

K14 - Pearson BTEC Level 3 Diploma in Vehicle Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K14a	600/4343/X	Pearson	120	720	N/A

K15 - Pearson BTEC Level 3 Extended Diploma in Vehicle Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K15a	600/4328/3	Pearson	180	1080	N/A

K16 - IMI Level 3 Diploma in Heavy Vehicle Maintenance and Repair Principles

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K16a	500/9812/3	IMI	79	670	N/A

K17 - Pearson BTEC Level 3 90-credit Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K17a	600/3888/3	Pearson	90	540	N/A

K18 - Pearson BTEC Level 3 Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K18a	500/8165/2	Pearson	180	1080	N/A

K19 - EAL Level 3 Diploma In Engineering Technology - Motorsport

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K19a	601/4291/1	EAL	61	360	N/A

K20 - EAL Level 3 Certificate in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K20a	601/5800/1	EAL	28	225	N/A

K21 - EAL Level 3 Subsidiary Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K21a	601/5799/9	EAL	48	375	N/A

K22 - EAL Level 3 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K22a	601/5801/3	EAL	68	525	N/A

K23 - EAL Level 3 Extended Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K23a	601/5802/5	EAL	98	750	N/A

K24 - Pearson BTEC Level 4 HNC Diploma in General Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K24a	500/8827/0	Pearson	120	480	N/A

K25 - Pearson BTEC Level 3 National Extended Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K25a	601/7584/9	Pearson	60	360	N/A

K26 - Pearson BTEC Level 3 National Foundation Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K26a	601/7591/6	Pearson	90	540	N/A

K27 - Pearson BTEC Level 3 National Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K27a	601/7580/1	Pearson	120	720	N/A

K28 - Pearson BTEC Level 3 National Extended Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K28a	601/7588/6	Pearson	180	1080	N/A

K29 - Pearson BTEC Level 4 Higher National Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K29a	603/0450/9	Pearson	120	480	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

***Level 3 NVQ Diploma in Automotive Engineering - is only for use by 25 years+ or apprentices 16-24 years who have achieved an Intermediate Engineering Manufacture framework in a relevant pathway (see below)**

K1 - K29 provide underpinning knowledge for C1a and C2a - C2b

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

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

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required in the engineering sector, including a broad range of mathematical, scientific and engineering/manufacturing principles and processes.

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.

***Note:** The Level 3 NVQ Diploma in Automotive Engineering may only be used by adult apprentices 25 years old and over, or apprentices 16-24 years who have achieved an

Intermediate Engineering Manufacture framework in a relevant pathway, who must:

a) have received appropriate health and safety training relevant to work area/environment that they will be working

and

b) have worked in an engineering or manufacturing environment and have skills knowledge and understanding broadly comparable to relevant practical NVQ Level 2 units detailed in Performing Engineering Operations, Performing Manufacturing Operations or other skill specific NVQ Level 2 in engineering or manufacturing

The above must be evidenced by a signed letter from the Apprentices Company and sent prior to the commencement of training to:

Standards and Frameworks Manager, Semta, Unit 2 The Orient Centre, Greycaine Road, Watford, Herts, WD24 7GP or frameworks@semta.org.uk

Transferable skills (England)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into the pathway

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

More specifically they may:

- have GCSEs in English, Maths, and Science at grade C/new equivalent grade 4 or above or
- have a Welsh Baccalaureate (Welsh applicants) or
- have A or AS levels in Science, Technology, Engineering or Mathematics subjects or
- have completed an Intermediate Engineering Apprenticeship (preferably in Engineering Manufacture or Improving Operational Performance) or
- have previous work experience or employment in the automotive sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have completed a Young Apprenticeship in Engineering or other related area or
- be willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- be keen and motivated to work in an automotive engineering environment

Note: Applicants wishing to undertake a BTEC Level 4 HNC Diploma underpinning knowledge qualification should already have achieved a Technical Certificate at Level 3, A Levels or equivalent in the relevant subject area and be age 18+ (as specified by the qualifications entry on RITS).

Progression from this pathway for those who complete an Advanced Engineering Manufacture - Automotive Apprenticeship

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

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

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

Description of this pathway

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

Pathway duration approximately 42 months depending on the qualification and unit options selected

- **Competence = 133 credits**
- **Knowledge = 60 credits**
- **Transferable Skills = 15 credits**

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

There are no additional requirements to the general framework entry requirements

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

Qualifications

Competence qualifications available to this pathway

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

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1769/7	EAL	133	432	N/A

Knowledge qualifications available to this pathway

K1 - EAL Level 3 Diploma in Engineering Technology

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

K2 - Pearson BTEC Level 3 Subsidiary Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7841/0	Pearson	60	360	N/A

K3 - Pearson BTEC Level 3 Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/8154/8	Pearson	120	720	N/A

K4 - Pearson BTEC Level 3 Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/7319/9	Pearson	120	720	N/A

K5 - EAL Level 3 Diploma in Casting Technology

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	600/1025/3	EAL	78	600	N/A

K6 - Pearson BTEC Level 4 HNC Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	500/8829/4	Pearson	120	480	N/A

K7 - Pearson BTEC Level 4 HNC Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	500/8824/5	Pearson	120	480	N/A

K8 - EAL Level 3 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	601/5801/3	EAL	68	525	N/A

K9 - EAL Level 3 Extended Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	601/5802/5	EAL	98	750	N/A

K10 - Pearson BTEC Level 3 National Extended Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	601/7584/9	Pearson	60	360	N/A

K11 - Pearson BTEC Level 3 National Foundation Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	601/7591/6	Pearson	90	540	N/A

K12 - Pearson BTEC Level 3 National Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	601/7580/1	Pearson	120	720	N/A

K13 - Pearson BTEC Level 4 Higher National Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	603/0450/9	Pearson	120	480	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

K1 - K13 provide underpinning knowledge for C1a

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

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

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required in the engineering sector, including a broad range of mathematical, scientific and engineering/manufacturing principles and processes.

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)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into the pathway

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

More specifically they may:

- have GCSEs in English, Maths, and Science at grade C/new equivalent grade 4 or above or
- have a Welsh Baccalaureate (Welsh applicants) or
- have A or AS levels in Science, Technology, Engineering or Mathematics subjects or
- have completed an Intermediate Engineering Apprenticeship (preferably in Engineering Manufacture or Improving Operational Performance) or
- have previous work experience or employment in the engineering/model-making sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have completed a Young Apprenticeship in Engineering or other related area or
- be willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- be keen and motivated to work in an engineering woodworking/pattern/ model making environment

Note: Applicants wishing to undertake a BTEC Level 4 HNC Diploma underpinning knowledge qualification should already have achieved a Technical Certificate at Level 3, A Levels or equivalent in the relevant subject area and be age 18+ (as specified by the qualifications entry on RITS).

Progression from this pathway for those who complete an Advanced Engineering Manufacture -Engineering Woodworking, Pattern and Model making Apprenticeship

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

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/job-family/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Level 3, Pathway 14: Engineering Leadership

Description of this pathway

Engineering Leadership (Craft and Technician) - total minimum credit value = 176 credits

Pathway duration approximately 42 months depending on the qualification and unit options selected

- **Competence = 101 credits**
- **Knowledge = 60 credits**
- **Transferable Skills = 15 credits**

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

There are no additional requirements to the general framework entry requirements

Job title(s)	Job role(s)
Project Leader (Engineering)	Produce specifications, research, create and evaluate engineering designs, managing resources, scheduling and monitoring project activities using project management techniques
Project Manager (Engineering)	Planning, organising, securing and managing resources to bring about the successful completion of specific project objectives.
Product Support Engineer	Deal with customers technical enquiries, evaluate production issues and provide engineering solutions, document engineering improvements and introduce them to production.

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Diploma in Engineering Leadership					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1030/7	EAL	101	307	N/A

Knowledge qualifications available to this pathway

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

K2 - Pearson BTEC Level 3 Subsidiary Diploma in Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/7841/0	Pearson	60	360	N/A

K3 - Pearson BTEC Level 3 Diploma in Engineering					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/8154/8	Pearson	120	720	N/A

K4 - Pearson BTEC Level 3 Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/7283/3	Pearson	120	720	N/A

K5 - Pearson BTEC Level 3 Diploma in Aeronautical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/7799/5	Pearson	120	720	N/A

K6 - Pearson BTEC Level 3 Diploma in Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	500/7319/9	Pearson	120	720	N/A

K7 - Pearson BTEC Level 3 Diploma in Construction and the Built Environment

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K7a	500/7137/3	Pearson	120	720	N/A

K8 - Pearson BTEC Level 4 HNC Diploma in Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K8a	500/8824/5	Pearson	120	480	N/A

K9 - Pearson BTEC Level 4 HNC Diploma in Electrical and Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K9a	500/8831/2	Pearson	120	480	N/A

K10 - Pearson BTEC Level 3 Diploma in Electrical/ Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K10a	500/8098/2	Pearson	120	720	N/A

K11 - EAL Level 3 Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K11a	601/5801/3	EAL	68	525	N/A

K12 - EAL Level 3 Extended Diploma in Engineering Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K12a	601/5802/5	EAL	98	750	N/A

K13 - Pearson BTEC Level 3 National Extended Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K13a	601/7584/9	Pearson	60	360	N/A

K14 - Pearson BTEC Level 3 National Foundation Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K14a	601/7591/6	Pearson	90	540	N/A

K15 - Pearson BTEC Level 3 National Diploma in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K15a	601/7580/1	Pearson	120	720	N/A

K16 - Pearson BTEC Level 4 Higher National Certificate in Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K16a	603/0450/9	Pearson	120	480	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

K1 - K16 provide underpinning knowledge for C1a

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

Employers have agreed that their apprentices should have access to a number of different technical knowledge qualifications that specify varying degrees of theoretical concepts required in the engineering sector, including a broad range of mathematical, scientific and engineering/manufacturing principles and processes.

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)

Apprentices must complete, or have completed, one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications in order to successfully complete their Apprenticeship.

The list of acceptable qualifications may vary depending on the Apprentice's completion date of their Apprenticeship. Please check the qualifications that are acceptable for each Apprentice.

If Apprentices do not have acceptable evidence of the achievement of these mandatory qualifications, at the required grade/level, an Apprenticeship certificate cannot be awarded.

ENGLISH

For the current list of acceptable English qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require English achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for English:

Click here to enter text.

MATHS

For the current list of acceptable Maths qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require Maths achievement above the minimum SASE requirement?

YES

If YES, please state the grade/level required for Maths:

Click here to enter text.

Inclusion of Information and Communications Technology (ICT)

Is ICT a framework requirement? **YES** **NO**

ICT

For the current list of acceptable ICT qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of [SASE](#) on the www.gov.uk website. Additional guidance materials can be found on the [Knowledge Base](#) section of the [ACE](#) website.

Does this framework require ICT achievement above the minimum SASE requirement

YES

If YES, please state the grade/level required for ICT:

Click here to enter text.

Progression routes into and from this pathway

Progression routes into the pathway

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

More specifically they may:

- have GCSEs in English, Maths, and Science at grade C/new equivalent grade 4 or above or
- have a Welsh Baccalaureate (Welsh applicants) or
- have A or AS levels in Science, Technology, Engineering or Mathematics subjects or
- have completed an Intermediate Engineering Apprenticeship (preferably in Engineering Manufacture or Improving Operational Performance) or
- have previous work experience or employment in the engineering sector or
- have completed a 14 to 19 Diploma in Engineering or Manufacturing or
- have completed a Young Apprenticeship in Engineering or other related area or
- be willing to undertake a course of training both on-the-job and off-the-job and apply this learning in the workplace
- be keen and motivated to work in an engineering environment

Note: Applicants wishing to undertake a BTEC Level 4 HNC Diploma underpinning knowledge qualification should already have achieved a Technical Certificate at Level 3, A Levels or equivalent in the relevant subject area and be age 18+ (as specified by the qualifications entry on RITS).

Progression from this pathway for those who complete an Advanced Engineering Manufacture - Engineering Leadership Apprenticeship

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

To further assist apprentices plan their careers we recommend they visit the following websites:

www.apprenticeships.org.uk/types-of-apprenticeships/engineering-and-manufacturing-technologies.aspx

nationalcareersservice.direct.gov.uk/advice/planning/jobfamily/Pages/manufactureandengineering.aspx

Employee rights and responsibilities

There are two methods of achieving ERR as set out below

Method 1 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 9 outcomes of ERR requirements.

Qualification details:

EAL Level 2 Award in Employment Rights and Responsibilities for new Entrants into the Science, Engineering and Manufacturing Sectors 600/0290/6

Credit value: 5 credits

Guided learning hours: 41

1b. City & Guilds have produced a stand-alone qualification that can cover all 9 outcomes of ERR requirements.

Qualification details:

City & Guilds Level 2 Subsidiary Award in Employment and Personal Learning at Work 600/2819/1

Credit value: 2 credits

Guided learning hours: 15

Please note: Although it may be possible to complete ERR in a minimum of 15 Guided learning hours (GLH), Semta recommend a minimum of 40 GLH are taken to complete the ERR requirements.

These qualifications 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 qualifications 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 - Workbook

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 preceding forms of ERR evidence will be required, together with the Apprentice Declaration and Authorisation form V3 which is available from the Federation for Industry Sector Skills and Standards (Fisss) website: acecerts.co.uk/

Certification Requirements for ERR

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the Apprentice's apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

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, composites, electrical, electronics, maintenance, marine, mathematics, metals and engineered metal products, renewables and science.

The UKRC is the Government's leading body for advanced gender equality in science, engineering and technology (SET) and the CEO's charter is a formal commitment to the UKRC's agenda to challenge the under-representation of women in SET. Women make up 50% of the labour market, yet they make up less than 20% of the labour market in science, engineering and technology.

The UKRC believes that only a concerted effort by the SET industry will break down the gender barriers that exist in traditionally male-dominated environments and we want to be part of a new consensus which will create an inclusive working environment for women. The manufacturing industries in which this framework operates are traditionally dominated by a white, male workforce. However, faced with an aging workforce and the probability of skill shortages we must look to attract new entrants from a much more diverse recruitment pool. This means that all young people and adults considering engineering and manufacturing as a career are welcome.

Providers of apprenticeship training including employers must be able to demonstrate there are no overt or covert discriminatory practices in the selection and employment of apprentices this can be demonstrated by the implementing of a Single Equality Scheme (SES). The new

Equality Duty (part of the Single Equality Bill) introduced to the public sector requires all public sector bodies to produce a SES combining their current race, disability and gender schemes and should be recognised by all providers of apprenticeship training. The implementation of a SES demonstrates the organisation's commitment to equality and diversity by identifying new and improved ways of working to ensure the organisation is more efficient and effective in meeting the diverse needs of both staff and customers.

All those who recruit apprentices, be they colleges, training providers or employers, must comply with the Equality act of 2010 and apply the Equality and Diversity legislation taking full account of the following:

- The Sex Discrimination Act 1975 and Code of Practice
- The Race Relations Act 1976 and Code of Practice
- The Disability Discrimination Act 1995 and Code of Practice
- Employment Equality (Religion or Belief) Regulations 2003
- Employment Equality (Sexual Orientation) Regulations 2003
- Employment Equality (Age) Regulations 2006
- The Equality Act 2010

Providers of apprenticeship training and employers must also actively monitor equality of opportunity and diversity procedures and take positive action where necessary to ensure equal access and treatment for all. Apprenticeships must be seen as a vital route to encourage and facilitate long term change in the equality and diversity of the engineering industry, therefore entry conditions into this framework are extremely flexible. All effort should be made to increase the diversity of our apprentice population.

Download the guidance on the Equality Act here:

www.equalityhumanrights.com/advice-and-guidance/new-equality-act-guidance/

On and off the job guided learning (England)

Total GLH for each pathway

Evidence requirements for claiming an Apprenticeship Certificate

The Apprenticeships, Skills, Children and Learning Act (ASCL) was enacted in November 2010 and the new certification requirements came into force on the 13th April 2011. One of the key requirements of the Act is that only the Certifying Authority for England can issue apprenticeship certificates to successful apprentices in England.

In order to make this happen the Federation for Industry Sector Skills & Standards (Fiss) has been designated the Certifying Authority in England. Certification applications are made through the Apprenticeship Certificates England (ACE) on-line system.

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).

Intermediate Apprenticeship Level 2

Pathway 1: Aerospace

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

Total minimum credit value: 84 credits

Total GLH = 651 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 = 40 minimum hours
- ERR = 15 minimum hours

Year 1 = 434 hours Year 2 = 217 hours

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

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

Total minimum credit value: 104 credits

Total GLH = 651 hours

- Competence = 215 minimum hours /59 minimum credits
- Knowledge =180 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 30 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 = 40 minimum hours
- ERR = 15 minimum hours

Year 1= 434 hours Year 2 = 217 hours

Pathway 3: Mechanical Manufacturing Engineering

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

Total minimum credit value: 94 credits

Total GLH = 621 hours

- Competence = 215 minimum hours/54 minimum credits
- Knowledge =150 minimum hours (smallest technical certificate) / 25 minimum credits
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 66 weeks x1 hour/week = 66 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1 = 414 hours Year 2 = 207 hours

Pathway 4: Engineering Maintenance and Installation

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

Total minimum credit value: 98 credits

Total GLH = 598 hours

- Competence = 239 minimum hours /63 minimum credits
- Knowledge =103 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 20 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 = 40 minimum hours
- ERR = 15 minimum hours

Year 1= 399 hours Year 2 = 199 hours

Pathway 5: Fabrication and Welding

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

Total minimum credit value: 85 credits

Total GLH = 640 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 = 40 minimum hours
- ERR = 15 minimum hours

Year 1 = 427hours Year 2 = 213 hours

Pathway 6: Materials Processing and Finishing

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

Total minimum credit value: 71 credits

Total GLH = 581 hours

- Competence = 215 minimum hours/38 minimum credits
- Knowledge = 110 minimum hours (smallest technical certificate) /18 minimum credits
- Functional Skills (notional value 45 hours x 3) =135 hours/15 credits
- Mentoring 66 weeks x 1 hour/week = 66 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1 = 387 hours Year 2 = 194 hours

Pathway 7: Engineering Technical Support

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

Total minimum credit value: 89 credits

Total GLH = 651 hours

- Competence = 215 minimum hours/51 minimum credits
- Knowledge = 180 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 23 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3 =135 hours /15 credits)
- Mentoring 66 weeks x 1 hour/week = 66 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1 = 434 hours Year 2 = 217 hours

Advanced Apprenticeship Level 3

Pathway 1: Aerospace

Pathway duration approximately 42 months depending on the qualification and unit options selected

1. Level 3 NVQ Extended Diploma in Aeronautical Engineering - **for use with 16-24 year olds only** or as an option for 25+

Total minimum credit value: 234

Credits

Total GLH = 1145 hours

- Competence = 441 minimum hours /165 minimum credits
- Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 54 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1=327 hours Year 2=327 hours Year 3=327 hours Year 4=164 hours

2. Level 3 NVQ Diploma in Aeronautical Engineering - **only for use with 25 years and over or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Aeronautical Engineering**

Note: This NVQ Diploma qualification is only for adult apprentices 25 years and over, or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Aeronautical Engineering, who must be able to demonstrate a practical ability comparable to 3 relevant practical PEO units at Level 2, along with relevant health and safety training.

Total minimum credit value: 207 credits

Total GLH = 1022 hours

- Competence = 318 minimum hours /138 minimum credits
- Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 54 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1 = 292 Year 2 = 292 Year 3 = 292 Year 4 = 146

Pathway 2: Marine (Ship Building, maintenance and repair)

Pathway duration approximately 42 months depending on the qualification and unit options selected

Total minimum credit value: 185 credits

Total GLH = 993 hours

- Competence = 424 minimum hours /142 minimum credits
- Knowledge = 225 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 28 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1= 284 hours Year 2=284 hours Year 3=284 hours Year 4=141 hours

Pathway 3: Mechanical Manufacturing Engineering

Pathway duration approximately 42 months depending on the qualification and unit options selected

Total minimum credit value: 149 credits

Total GLH = 963 hours

- Competence = 439 minimum hours /106 minimum credits
- Knowledge = 180 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 28 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits

- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1=275 hours Year 2=275 hours Year 3=275 hours Year 4= 138 hours

Pathway 4: Marine (Yacht and Boat Building, maintenance and repair)

Pathway duration approximately 42 months depending on the qualification and unit options selected

Total minimum credit value: 178 credits

Total GLH = 1005 hours

- Competence = 301 minimum hours /115 minimum credits
- Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 48 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1=287 hours Year 2=287 hours Year 3=287 hours Year 4=144 hours

Pathway 5: Engineering Maintenance

Pathway duration approximately 42 months depending on the qualification and unit options selected

Total minimum credit value: 217 credits

Total GLH = 950 hours

- Competence = 426 minimum hours /179 minimum credits
- Knowledge = 180 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 23 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1=271 hours Year 2=271 hours Year 3=271 hours Year 4=137 hours

Pathway 6: Fabrication and Welding

Pathway duration approximately 42 months depending on the qualification and unit options selected

Total minimum credit value: 194 credits

Total GLH = 1085 hours

- Competence = 516 minimum hours /151 minimum credits
- Knowledge = 225 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 28 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1=310 hours Year 2=310 hours Year 3=310 hours Year 4=155 hours

Pathway 7: Materials Processing & Finishing

Pathway duration approximately 42 months depending on the qualification and unit options selected

Total minimum credit value: 191 credits

Total GLH = 1136 hours

- Competence = 432 minimum hours /122 minimum credits
- Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 54 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1=325 hours Year 2=325 hours Year 3=325 hours Year 4=161 hours

Pathway 8: Engineering Technical Support

Pathway duration approximately 42 months depending on the qualification and unit options selected

1. Level 3 NVQ Extended Diploma in Engineering Technical Support - **for use with 16-24 year olds only** or as an option for 25+

Total minimum credit value: 188 credits Total GLH = 950 hours

- Competence = 426 minimum hours /150 minimum credits
- Knowledge = 180 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 23 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1=271 hours Year 2=271 hours Year 3=271 hours Year 4=137 hours

2. Level 3 NVQ Diploma in Engineering Technical Support - only for use with 25 years and over or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Engineering Technical Support

Note: This NVQ Diploma qualification is only for adult apprentices 25 years and over, or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Engineering Technical Support, who must be able to demonstrate a practical ability comparable to 3 relevant practical PEO units at Level 2, along with relevant health and safety training.

Total minimum credit value: 166 credits

Total GLH = 880 hours

- Competence = 311 minimum hours /123 minimum credits
- Knowledge = 225 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 28 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1 = 251 Year 2 = 251 Year 3 = 251 Year 4 = 127

Pathway 9: Electrical and Electronic Engineering

Pathway duration approximately 42 months depending on the qualification and unit options selected

1. Level 3 NVQ Extended Diploma in Electrical and Electronic Engineering - for use with 16-24 year olds only or as an option for 25+

Total minimum credit value: 160 credits

Total GLH = 994 hours

- Competence = 425 minimum hours /117 minimum credits
- Knowledge = 225 minimum hours (based on the smallest technical certificate GLH)

- Knowledge = 28 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1=284 hours Year 2=284 hours Year 3=284 hours Year 4=142 hours

2. Level 3 NVQ Diploma in Electrical and Electronic Engineering - for use with 25 years and over only

Note: This NVQ Diploma qualification is for adult apprentices 25 years and over only who must be able to demonstrate a practical ability comparable to 3 relevant practical PEO units at Level 2, along with relevant health and safety training.

Total minimum credit value: 133 credits

Total GLH = 871 hours

- Competence = 302 minimum hours /90 minimum credits
- Knowledge = 225 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 28 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1 = 249 Year 2 = 249 Year 3 = 249 Year 4 = 124

Pathway 10: Installation and Commissioning

Pathway duration approximately 42 months depending on the qualification and unit options selected

1. Level 3 NVQ Extended Diploma in Installation and Commissioning - for use with 16-24 year olds only or as an option for 25+

Total minimum credit value: 237 credits

Total GLH = 1129 hours

- Competence = 425 minimum hours /176 minimum credits
- Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 46 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1=323 hours Year 2=323 hours Year 3=323 hours Year 4=160 hours

2. Level 3 NVQ Diploma in Installation and Commissioning - only for use with 25 years and over or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Engineering Maintenance and Installation

Note: This NVQ Diploma qualification is only for adult apprentices 25 years and over, or apprentices 16-24 years who have achieved Level 2 NVQ Diploma in Engineering Maintenance and Installation, who must be able to demonstrate a practical ability comparable to 3 relevant practical PEO units at Level 2, along with relevant health and safety training.

Total minimum credit value: 210 credits

Total GLH = 1006 hours

- Competence = 302 minimum hours /149 minimum credits
- Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 46 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) = 135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week = 154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1 = 287 Year 2 = 287 Year 3 = 287 Year 4 = 145

Pathway 11: Engineering Tool-making

Pathway duration approximately 42 months depending on the qualification and unit options selected

Total minimum credit value: 201

Total GLH = 1143 hours

- Competence = 439 minimum hours /132 minimum credits
- Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 54 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1=327 hours Year 2=327 hours Year 3=327 hours Year 4=162 hours

Pathway 12: Automotive

Pathway duration approximately 42 months depending on the qualification and unit options selected

1. Level 3 NVQ Extended Diploma in Automotive Engineering - for use with 16-24 year olds only or as an option for 25+

Total minimum credit value: 186 credits

Total GLH = 1001 hours

- Competence = 432 minimum hours /143 minimum credits
- Knowledge = 225 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 28 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1=286 hours Year 2=286 hours Year 3=286 hours Year 4=143 hours

2. Level 3 NVQ Diploma in Automotive Engineering - for use with 25 years and over only

Note: This NVQ Diploma qualification is for adult apprentices over 25 years only who must be able to demonstrate a practical ability comparable to 3 relevant practical PEO units at Level 2, along with relevant health and safety training.

Total minimum credit value: 159 credits

Total GLH = 878 hours

- Competence = 309 minimum hours /116 minimum credits
- Knowledge = 225 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 28 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1 = 254 Year 2 = 254 Year 3 = 254 Year 4 = 126

Pathway 13: Engineering Woodworking, Pattern and Model Making

Pathway duration approximately 42 months depending on the qualification and unit options selected

Total minimum credit value: 208 credits

Total GLH = 1136 hours

- Competence = 432 minimum hours /133 minimum credits
- Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 60 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1=325 hours Year 2=325 hours Year 3=325hours Year 4=161 hours

Pathway 14: Engineering Leadership

Pathway duration approximately 42 months depending on the qualification and unit options selected

Total minimum credit value: 176 credits

Total GLH = 1086 hours

- Competence = 307 minimum hours /101 minimum credits
- Knowledge = 360 minimum hours (based on the smallest technical certificate GLH)
- Knowledge = 60 minimum credits (based on the smallest technical certificate credit)
- Functional Skills (notional value 45 hours x 3) =135 hours /15 credits
- Mentoring 154 weeks x 1 hour/week =154 hours
- PLTS = 40 minimum hours
- ERR = 15 minimum hours

Year 1=310 hours Year 2=310 hours Year 3=310 hours Year 4=156 hours

Minimum off-the-job guided learning hours

Below are the minimum off-the-job guided learning hours specified for all pathways of the Intermediate Apprenticeship (Level 2) - Engineering Manufacture

Pathway 1: Aerospace

Minimum off-the-job hours through pathway 1 are 436 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 67% of the total pathway GLH.

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

Minimum off-the-job hours through pathway 2 are 436 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 67% of the total pathway GLH.

Pathway 3: Mechanical Manufacturing Engineering

Minimum off-the-job hours through pathway 3 are 406 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.

Pathway 4: Engineering Maintenance and Installation

Minimum off-the-job hours through pathway 4 is 359 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 60% of the total pathway GLH.

Pathway 5: Fabrication and Welding

Minimum off-the-job hours through pathway 5 is 426 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 67% of the total pathway GLH.

Pathway 6: Materials Processing and Finishing

Minimum off-the-job hours through pathway 6 is 366 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 63% of the total pathway GLH.

Pathway 7: Engineering Technical Support

Minimum off-the-job hours through pathway 7 is 436 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 67% of the total pathway GLH.

Below are the minimum off-the-job guided learning hours specified for all pathways of the Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 1: Aerospace

Minimum off-the-job hours through pathway 1 is 704 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 62% of the total pathway GLH for the L3 NVQ Extended Diploma option or 69% for the L3 NVQ Diploma option

Pathway 2: Marine (Ship Building, maintenance and repair)

Minimum off-the-job hours through pathway 2 is 569 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 57% of the total pathway GLH.

Pathway 3: Mechanical Manufacturing Engineering

Minimum off-the-job hours through pathway 3 is 524 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 54% of the total pathway GLH.

Pathway 4: Marine (Yacht and Boat Building, maintenance and repair)

Minimum off-the-job hours through pathway 4 is 704 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR) PLTS and Mentoring.

This amounts to 70% of the total pathway GLH

Pathway 5: Engineering Maintenance

Minimum off-the-job hours through pathway 5 is 524 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 55% of the total pathway GLH.

Pathway 6: Fabrication and Welding

Minimum off-the-job hours through pathway 6 is 569 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 52% of the total pathway GLH.

Pathway 7: Materials Processing & Finishing

Minimum off-the-job hours through pathway 7 is 704 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 62% of the total pathway GLH.

Pathway 8: Engineering Technical Support

Minimum off-the-job hours through pathway 8 is 524 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 55% of the total pathway GLH.

Pathway 9: Electrical and Electronic Engineering

Minimum off-the-job hours through pathway 9 is 569 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 57% of the total pathway GLH for the L3 NVQ Extended Diploma option or 65% for the L3 NVQ Diploma option.

Pathway 10: Installation and Commissioning

Minimum off-the-job hours through pathway 10 is 704 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 62% of the total pathway GLH for the L3 NVQ Extended Diploma option or 70% for the L3 NVQ Diploma option.

Pathway 11: Engineering Tool-making

Minimum off-the-job hours through pathway 11 is 704 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 62% of the total pathway GLH.

Pathway 12: Automotive

Minimum off-the-job hours through pathway 12 is 569 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 57% of the total pathway GLH for the L3 NVQ Extended Diploma option or 65% for the L3 NVQ Diploma option.

Pathway 13: Engineering Woodworking, Pattern and Model Making

Minimum off-the-job hours through pathway 13 is 704 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 62% of the total pathway GLH.

Pathway 14: Engineering Leadership

Minimum off-the-job hours through pathway 14 is 704 GLH, and is evidenced by completion of the knowledge element, Functional skills, Employment Rights and Responsibilities (ERR), PLTS and Mentoring.

This amounts to 62% of the total pathway GLH.

How this requirement will be met

Apprentices following the 7 pathways for the Intermediate Apprenticeship and the 14 pathways for the Advanced Apprenticeship described within this framework will receive off-the-job learning via a combination of activities such as the Underpinning Knowledge (Technical certificate), Functional skills, Employee Rights and Responsibilities (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.

Functional 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. Functional 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.

Employee Rights and Responsibilities (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.

Off-the-job training needs to:

- achieve clear and specific outcomes which contribute directly to the successful achievement of the framework and this may include accredited and non-accredited elements of the framework
- be planned, reviewed and evaluated jointly between the apprentice and a tutor, teacher, mentor or manager
- allow the apprentice access as, and when required to tutors, teachers, mentor(s) or manager
- be delivered through one or more of the following methods: individual and group teaching, e-learning, distance learning, coaching; mentoring, feedback and assessment; collaborative/networked learning with peers, guided study and induction.

Providers will not be required to record individual on and off-the-job Guided Learning Hours (GLH). However for certification purposes, the provider will be required to declare that the apprentice has completed the on and off-the-job GLH requirement as set out in this Apprenticeship framework.

Guided learning hours delivered under an apprenticeship agreement may vary depending on the previous experience and attainment of the apprentice. The amount of off-the-job training required to complete the apprenticeship under the apprenticeship agreement may then be reduced accordingly, provided the total number of off-the-job hours for this framework can be verified for apprenticeship certification.

It is recommended that a mentor is appointed for each apprentice to review their progress on a regular basis. It is estimated that a mentor will have up to two hours per week contact time with each apprentice. This activity will take place off-the-job but is inclusive within the off-the-job hours quoted in the previous 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

Advanced Apprenticeship in Engineering Manufacture

With the exception of those undertaking:

- Pathway 4 - Yacht, Boat Building, Maintenance and Repair where Advanced Apprentices have to complete the Level 3 NVQ Diploma in Marine Engineering
- Pathway 14: Engineering Leadership where Advanced Apprentices have to complete the Level 3 NVQ Diploma in Engineering Leadership
- or adult apprentices 25 years and over with relevant experience undertaking Pathway 1 - Aerospace Engineering, Pathway 8 - Engineering Technical Support, Pathway 9 - Electrical and Electronic Engineering and Pathway 12 - Automotive Engineering

all other Advanced Apprentices must complete one of the Level 3 NVQ Extended Diplomas which include a number of Performing Engineering Operations (PEO) Level 2 NVQ units. These units should be delivered and assessed in a sheltered and realistic environment and must be achieved before apprentices complete the Level 3 units in the Extended Diploma on the job in the workplace.

It is recognised that in some instances in the past, the PEO NVQ Level 2 has been delivered on a part-time day-release basis in a sheltered environment with the employer delivering the NVQ Level 3 in parallel for the balance of time each week. There are clear disadvantages to this approach:

- a) The potential for trainees to work in hazardous environments commensurate with level 3 activities without having received the Health and Safety tuition at Level 2 that would support this situation
- b) The potential for the learner not to be trained in a progressive way developing competences and knowledge at level 2 that progresses seamlessly to Level 3.

If providers and employers wish to continue delivery on this basis, they must ensure that:

- a) All appropriate Health and Safety units are successfully completed at Level 2 prior to

any delivery at Level 3 in the workplace

Any units at Level 3 delivered in the workplace must have been preceded by delivery at Level 2 in a sheltered environment.

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

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

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

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

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

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

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

Advanced Apprenticeship (Level 3) - Engineering Manufacture

Pathway 1: Aerospace

Minimum on-the-job through pathway 1 is 441 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Aeronautical Engineering

Note: Minimum on-the-job through pathway 1 is 318 GLH if evidenced by completion of the Level 3 NVQ Diploma in Aeronautical Engineering (only by an adult apprentice 25 years and over, or an apprentice 16-24 years who has achieved Level 2 NVQ Diploma in Aeronautical Engineering, with a practical skill comparable with 3 relevant practical PEO units, along with relevant health and safety training)

Pathway 2: Marine (Ship Building, maintenance and repair)

Minimum on-the-job through pathway 2 is 424 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Marine Engineering

Pathway 3: Mechanical Manufacturing Engineering

Minimum on-the-job through pathway 3 is 439 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Mechanical Manufacturing Engineering

Pathway 4: Marine (Yacht and Boat Building, maintenance and repair)

Minimum on-the-job through pathway 4 is 301 GLH and is evidenced by completion of the Level 3 NVQ Diploma in Marine Engineering

Pathway 5: Engineering Maintenance

Minimum on-the-job through pathway 5 is 426 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Engineering Maintenance

Pathway 6: Fabrication and Welding

Minimum on-the-job through pathway 6 is 516 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Fabrication and Welding

Pathway 7: Materials Processing & Finishing

Minimum on-the-job through pathway 7 is 432 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma Materials Processing & Finishing

Pathway 8: Engineering Technical Support

Minimum on-the-job through pathway 8 is 426 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Engineering Technical Support

Note: Minimum on-the-job through pathway 1 is 311 GLH if evidenced by completion of the Level 3 NVQ Diploma in Engineering Technical Support (only by an adult apprentice 25 years and over, or an apprentice 16-24 years who has achieved Level 2 NVQ Diploma in Engineering Technical Support, with a practical skill comparable with 3 relevant practical PEO units, along with relevant health and safety training)

Pathway 9: Electrical and Electronic Engineering

Minimum on-the-job through pathway 9 is 425 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Electrical and Electronic Engineering

Note: Minimum on-the-job through pathway 1 is 302 GLH if evidenced by completion of the Level 3 NVQ Diploma in Electrical and Electronic Engineering (only by an adult apprentice 25 years and over with a practical skill comparable with 3 relevant practical PEO units, along with relevant health and safety training)

Pathway 10: Installation and Commissioning

Minimum on-the-job through pathway 10 is 425 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Installation and Commissioning

Note: Minimum on-the-job through pathway 1 is 302 GLH if evidenced by completion of the Level 3 NVQ Diploma in Installation and Commissioning (only by an adult apprentice 25 years and over, or an apprentices 16-24 years who has achieved Level 2 NVQ Diploma in Engineering Maintenance and Installation, with a practical skill comparable with 3 relevant practical PEO units, along with relevant health and safety training)

Pathway 11: Engineering Tool-making

Minimum on-the-job through pathway 11 is 439 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Engineering Tool-making

Pathway 12: Automotive

Minimum on-the-job through pathway 12 is 432 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Automotive Engineering

Note: Minimum on-the-job through pathway 12 is 309 GLH if evidenced by completion of the Level 3 NVQ Diploma in Automotive Engineering (only by an adult apprentice 25 years and over with a practical skill comparable with 3 relevant practical PEO units, along with relevant health and safety training)

Pathway 13: Engineering Woodworking, Pattern and Model Making

Minimum on-the-job through pathway 13 is 432 GLH and is evidenced by completion of the Level 3 NVQ Extended Diploma in Engineering Woodworking, Pattern and Model Making

Pathway 14: Engineering Leadership

Minimum on-the-job through pathway 14 is 430 GLH and is evidenced by completion of the Level 3 NVQ Diploma in Engineering Leadership

How this requirement will be met

On-the-job Delivery

The units must be assessed in a work environment and must be assessed in accordance with the 'Common Requirements for National Vocational Qualifications (NVQ)' which can be downloaded from Semta's website.

Additional assessment requirements have been published by Semta. These additional assessment requirements are set down in Semta's Engineering NVQ unit assessment strategy which can also be downloaded from Semta's website.

On-the-job training hours should:

- achieve clear and specific outcomes which contribute directly to the successful achievement of the framework and this may include accredited and non-accredited elements of the framework
- be planned, reviewed and evaluated jointly between the apprentice and a tutor, teacher, mentor or manager
- allow access as and when required by the apprentice either to a tutor, teacher, mentor or manager
- be delivered during contracted working hours.

Examples of on-the-job training hours in an engineering or manufacturing context might be:

- technical or business 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 apprentices.

These hours may vary depending on previous experience and attainment of the apprentice. Where a learner enters an apprenticeship agreement having previously attained or acquired the appropriate competencies or knowledge, this prior learning needs to be recognised and documented using the relevant RPL procedures (as off-the-job above).

The amount of on-the-job training required to complete the apprenticeship under the apprenticeship agreement may then be reduced accordingly, provided the total number of on-the-job hours for this framework can be verified for apprenticeship certification.

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.

Advanced Apprentices must complete one of the Level 3 NVQ Extended Diplomas (except in the case of Pathways 1, 4, 8, 9, 10, 12 and 14). However if the relevant PEO units have already been achieved and certificated in a previous programme such as applicants who have completed the Improving Operational Performance Level 2 framework (Performing Engineering Operations Level 2 pathway) then they will be able to accredit these against the requirements of the Extended Level 3 Diploma. In such circumstances this would result in the minimum GLH requirements for the relevant pathway being reduced by a minimum of 123 hours and a minimum value of 27 credits (depending on the PEO units completed).

The Level 3 Extended NVQ Diplomas include a number of Performing Engineering Operations (PEO) Level 2 NVQ units. It is strongly recommended that the PEO units are delivered and assessed off the job in a sheltered and realistic work environment. This will ensure that Advanced Apprentices have attained a minimum and safe level of skills, knowledge and understanding in the occupational area prior to entering the workplace, thus minimising the risk of injury to themselves and other employees and the potential of increased costs incurred by the employer such as damaged tools/equipment, scrapped materials and components.

In order to ensure the safe transition to the workplace prior to being exposed to the hazards of the industrial environment, Advanced Apprentices must receive sufficient Health and Safety training covering both general and occupational specific requirements whilst undertaking the selected Level 2 NVQ PEO units off the job and in a sheltered and realistic work environment.

As a minimum the training programme should include the skills, knowledge and understanding requirements set out in the Performing Engineering Operations Level 2. Whilst undertaking the skill specific Level 2 NVQ units as part of the Level 3 NVQ Extended Diploma, Training Providers may wish to consider registering Advanced Apprentices on the three Mandatory Units from the Level 2 NVQ Diploma in Performing Engineering Operations

- Unit 1: Working Safely in an Engineering Environment.
- Unit 2: Carrying out Engineering Activities Efficiently and Effectively.
- Unit 3: Using and Communicating Technical Information.

This has the advantage that if for any reason the apprentice is not able to complete the Level 3 NVQ Extended Diploma they would have achieved sufficient units to claim the Level 2 NVQ Diploma in Performing Engineering Operations

Certification Requirements for GLH

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the apprentice's Apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

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 - Qualifications

1a. EAL have produced a stand-alone qualification that covers all 6 skill areas of PLTS.

Qualification details:

EAL Level 2 Award in Personal Learning and Thinking Skills for New Entrants into the Science, Engineering and Manufacturing Sectors 600/2019/2

Credit value: 6 credits

Guided learning hours: 60

1b. Pearson have produced a stand-alone qualification that can cover all 6 skill areas of PLTS if Units 7, 8 and 9 are achieved

Qualification details:

Pearson BTEC Level 2 Award in WorkSkills for Effective Learning and Employment 501/1793/2

Credit value: 4 credits

Guided learning hours: 40

Please note The Pearson BTEC level 2 Award qualification consists of a mandatory unit as an introduction to apprenticeships. Apprentices **must then complete Units 7, 8 and 9** to cover all the PLTS which are mapped in grids at the end of each unit. This qualification is designed to be assessed in the context of the sector relevant to the apprenticeship framework being undertaken (ie manufacturing/engineering in this case).

This qualification expires on 30/04/2018 and will no longer be available to new starts from 01/05/2018

1c. Pearson have produced a Level 3 stand-alone qualification that can cover all 6 skill areas if Units 5, 6 and 7 are achieved.

Qualification details:

Pearson BTEC Level 3 Award in WorkSkills for Effective Learning and Employment 501/1791/9
Credit value: 4 credits
Guided learning hours: 40

The Pearson BTEC Level 3 Award consists of a mandatory unit as an introduction to apprenticeships. Apprentices **must then complete Units 5, 6 and 7** to cover all the PLTS which are mapped in grids at the end of each unit. This qualification is designed to be assessed in the context of the sector relevant to the apprenticeship framework being undertaken (ie manufacturing/engineering in this case).

This qualification expires on 30/04/2018 and will no longer be available to new starts from 01/05/2018

Please note: Only Level 2 is required to meet the framework requirements

Method 2 - Workbook

Apprentices or training providers may download the Semta PLTS Evidence Recording Document available from the Semta website: <http://semta.org.uk/>

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 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

or

A qualification certificate for Pearson BTEC Level 2 Award in WorkSkills for Effective Learning and Employment **which must include achievement of Units 7, 8 and 9**

or

A qualification certificate for Pearson BTEC Level 3 Award in WorkSkills for Effective Learning and Employment **which must include achievement of Units 5, 6 and 7**

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.

Certification Requirements for PLTS

All providers and apprentices must complete the Apprenticeship Consent Form when claiming for the apprentice's Apprenticeship certificate. The universal form covers declarations for the apprentice to:

- confirm the existence of an Apprenticeship Agreement between themselves and their employer;
- confirm their achievement of all ERR requirements;
- confirm their achievement of all 6 PLTS;
- confirm that they have received at least the minimum levels of GLH set out in their framework and have undertaken training both on and off the job.

All apprentices must sign this form at the end of programme to give their authority for the claimant, named on the form, to make a claim, on their behalf, for their Apprenticeship completion certificate.

Creative thinking

People think creatively by generating and exploring ideas, making original connections. They try different ways to tackle a problem, working with others to find imaginative solutions and outcomes that are of value.

To demonstrate these skills, behaviours and personal qualities, apprentices should:

- Generate ideas and explore possibilities;
- Ask questions to extend their thinking;
- Connect their own and others' ideas and experiences in inventive ways; Question their own and others' assumptions;
- Try out alternatives or new solutions and follow ideas through; Adapt ideas as circumstances change.

Independent enquiry

People process and evaluate information in their investigations, planning what to do and how to go about it. They take informed and well-reasoned decisions, recognising that others have different beliefs and attitudes.

Skills, behaviours and personal qualities for apprentices:

- Identify questions to answer and problems to resolve;
- Plan and carry out research, appreciating the consequences of decisions; Explore issues, events or problems from different perspectives;
- Analyse and evaluate information, judging its relevance and value;
- Consider the influence of circumstances, beliefs and feelings on decisions and events; Support conclusions, using reasoned arguments and evidence.

Reflective learning

People evaluate their strengths and limitations, setting themselves realistic goals with criteria for success. They monitor their own performance and progress, inviting feedback from others and making changes to further their learning.

To demonstrate these skills, behaviours and personal qualities, apprentices should:

- Assess themselves and others, identifying opportunities and achievements;
- Set goals with success criteria for their development and work;
- Review progress, acting on the outcomes;
- Invite feedback and deal positively with praise, setbacks and criticism; Evaluate experiences and learning to inform future progress;
- Communicate their learning in relevant ways for different audiences.

Team working

People work confidently with others, adapting to different contexts and taking responsibility for their own part. They listen to and take account of different views. They form collaborative relationships, resolving issues to reach agreed outcomes.

To demonstrate these skills, behaviours and personal qualities, apprentices should:

- Collaborate with others to work towards common goals;
- Reach agreements, managing discussions to achieve results;
- Adapt behaviour to suit different roles and situations, including leadership roles; Show fairness and consideration to others;
- Take responsibility, showing confidence in themselves and their contribution;
- Provide constructive support and feedback to others.

Self management

People organise themselves, showing personal responsibility, initiative, creativity and enterprise with a commitment to learning and self-improvement. They actively embrace change, responding positively to new priorities, coping with challenges and looking for opportunities.

To demonstrate these skills, behaviours and personal qualities, apprentices should:

- Seek out challenges or new responsibilities and show flexibility when priorities change;
- Work towards goals, showing initiative, commitment and perseverance;
- Organise time and resources, prioritising actions;
- Anticipate, take and manage risks;
- Deal with competing pressures, including personal and work-related demands;
- Respond positively to change, seeking advice and support when needed;
- Manage their emotions, and build and maintain relationships.

Effective participation

People actively engage with issues that affect them and those around them. They play a full part in the life of their school, college, workplace or wider community by taking responsible action to bring improvements for others as well as themselves.

To demonstrate these skills, behaviours and personal qualities, apprentices should:

- Discuss issues of concern, seeking resolution where needed;
- Present a persuasive case for action;
- Propose practical ways forward, breaking these down into manageable steps;
- Identify improvements that would benefit others as well as themselves;
- Try to influence others, negotiating and balancing diverse views to reach workable solutions;
- Act as an advocate for views and beliefs that may differ from their own.

apprenticeship **FRAMEWORK**

For more information visit-
www.acecerts.co.uk/framework_library