apprenticeship
FRAMEWORK

Engineering and Advanced Manufacturing Degree Apprenticeship (Wales)

IMPORTANT NOTIFICATION FOR ALL APPRENTICESHIP STARTS FROM 14 OCTOBER 2016

Modifications to SASW came into effect on 14 October 2016. These changes relate to the **Essential Skills** and **Employer Rights and Responsibilities** requirements of a framework and they **ONLY** apply to **new Apprenticeship starts on, or after, 14th October**. Apprenticeship starts before this date must continue to meet the 2013 SASW requirements for Essential Skills and Employer Rights and Responsibilities.

For more details of the changes and how they will affect new apprenticeship starts, please read the following preface page to the framework document. NB: Please check the "Revising a Framework" section for information on any additional changes that may have been made to this framework.

Latest framework version?

For any previous versions of this framework: www.acwcerts.co.uk/framework_library

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Prentisiaethau Apprenticeships

Engineering and Advanced Manufacturing Degree Apprenticeship

Contents

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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: 2	**This framework includes:**
Framework ID: FR04459	Level 2 ☐ Level 3 ☐ Level 4-7 ☒
Date this framework is to be reviewed by: 31/07/2024	**This framework is for use in: Wales**

Short description

This Degree Apprenticeship programme at level 6 has been designed to provide the Engineering and Advanced Manufacturing sector in Wales with high quality Engineering and Advanced Manufacturing professionals.

The Engineering and Advanced Manufacturing Degree Apprentices will develop higher level applied practical skills, knowledge and competence combined within an applied honours degree programme in one of five areas of Engineering and Advanced Manufacturing discipline, including:

Mechanical Engineering
Electrical / Electronic Engineering
Advanced Manufacturing Engineering
Chemical Engineering Power

Engineering Roles in this framework are likely to fit into Standard Occupational Code (SOC): 21

Contact information

Proposer of this framework

Semta has worked closely with its employers to define National Occupational Standards (NOS) for Engineering and Advanced manufacturing.
Degree qualification specifications of learning and skills outcomes have been developed that are suitable for use within this degree apprenticeship framework.
This Engineering and Advanced Manufacturing Degree Apprenticeship (Wales) framework and the degree apprenticeship learning and skills outcomes has been developed in response to industry needs. The need for an Engineering and Advanced manufacturing degree apprenticeship framework was identified through employer consultation and five priority pathway themes were identified for the Engineering and Advanced Manufacturing Degree Apprenticeship for Wales. The applied degree qualification learning and skills outcomes specifications underpinning the degree apprenticeship framework have been developed through collaboration with employers in Wales between September 2018 and March 2019, and are informed by the relevant NOS.
Since then the framework has been reviewed by a large employer group together with their supply chains, including Tata Steel, Airbus, Kellogg's, Sony, Renishaw, Control Techniques, Calsonic Kansei, Kasai, Hayakawa International (UK) Ltd, BAe Systems, Spectrum Technologies Ltd, Dawson Shanahan Wales Ltd, GTS Flexible Materials Ltd, Wall Colmonoy, Celsa Manufacturing, Newport Wafer Fab Ltd., e-cube aero and Toyota.
The framework has also been consulted with and informed by the network of delivery colleges and universities in Wales.
This Engineering and Advanced Manufacturing Degree Apprenticeship framework will ensure that apprentices are given the appropriate skills, knowledge and understanding required in the workplace to support the wide range of roles that apprentices might be undertaking.
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Developer of this framework

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Revising a framework

Why this framework is being revised

N/A

Summary of changes made to this framework

N/A

Qualifications removed

N/A

Qualifications added

N/A

Qualifications that have been extended

N/A

Purpose of this framework

Summary of the purpose of the framework

This Degree Apprenticeship framework has been designed to provide up-skilling, progression and re-skilling routes for those seeking to become Engineering and Advanced Manufacturing Professionals.

Engineering and Advanced Manufacturing Degree Apprentices can work in the following broad areas:

Mechanical Engineering
Electrical / Electronic Engineering
Advanced Manufacturing
Chemical Engineering
Power Engineering

What is included in this Apprenticeship?

The apprenticeship is made up of a range of applied degree qualifications and learning that will provide apprentices with the skills and knowledge required to become competent in their chosen job role within Engineering and Advanced Manufacturing.

The framework includes the appropriate balance of technical, business and interpersonal knowledge and skills designed to ensure apprentices have an appropriate set of skills to operate in today's engineering and advanced manufacturing job roles.

Engineering and Advanced Manufacturing is a key sector for Wales. It spans a wide range of types of industry, including:

Metals, plastics and non-mineral products
Food and beverages
Shipbuilding
ICT / precision instruments
Automotive
Aerospace
Machinery
Equipment
Electrical / electronic products, semiconductors, chips, PCBs etc.
Chemicals Food and beverages
Pharmaceuticals)
High explosives
Electrical power generation

Nuclear electrical power generation
Renewables electrical power generation
Improvements to productivity and competitiveness across the Engineering and Advanced Manufacturing sector continue to present new technology skills investment paradigms.

The Engineering and Advanced Manufacturing sector includes both mature and "leading-edge" types of industry:

The "leading-edge" types include:
- Aerospace
- Automotive
- Electronics
- Marine (ship, boat and yacht building, maintenance and repair)

The "mature engineering" types include:
- Electrical
- Metal goods
- Mechanical
- Other Transport Equipment

Sector employment and establishments

Advanced Materials and Manufacturing is an exciting sector in Wales. The combined Advanced Manufacturing and Engineering (AME) sub-sectors in Wales employ over 150,000 people. An estimated 66,000 people are employed in technical roles such as professional engineers, scientists and technologists. This sector adds more value to the economy than most other sectors (Annual Business Survey ONS, 2015).

Many jobs in Advanced Materials and Manufacturing are highly skilled such as managers, professionals and engineers. The industry needs Science, Technology, Engineering and Maths graduates and employers are looking for higher skill levels requiring a degree qualification.

Key AME sub-sectors in Wales include metals (27% of AME employment), consultancy, testing and analysis (16%), electronics (15%), aerospace (14%) and automotive (10%). AME employment in Wales is concentrated in Flintshire (15%), Cardiff (9%), Neath Port Talbot (8%) and Bridgend (6%).

Micro-sized establishments (less than 10 employees) account for 82% of total AME establishments, Small and Medium-sized Enterprises (SMEs (10 to 249 employees)) represent 17% of establishments and less than 1% of AME establishments in Wales are large (250 employees plus) – just 495 of approx. 120,480.

Demographics of the technical workforce in the AME sectors in Wales

Working status - 95% of the AME technical workforce is a company employee and 95% of the technical workforce is employed on a full-time basis.

Gender - only 9% of the technical workforce is female.
Age – only 6% of the technical workforce is aged 16-24 years old, with 9% aged 60 years and over.
Disability - only 8% of the technical workforce has some sort of disability.
Ethnicity - only 5% of the technical workforce is from an ethnic minority.

Occupations

In terms of technical occupations, approximately 12,500 people are employed as technicians, 19,670 people are employed in craft level occupations and 17,345 in operator level occupations. These three technical occupations account for 75% of total employment in technical occupations within the AME sectors in Wales.

Employment trends

The AME sectors in Wales have experienced a period of major restructuring. Between 2010 to 2014, there was a net gain of nearly 17,000 jobs (+21%), compared with an increase in employment of 3% across all sectors in Wales. In 2015, there were 433 postings for technical engineering jobs in Wales.

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 Wales for 4,000 new recruits (800 per annum) in these occupations between 2016-2020.

Vacancies

Employers in the AME sectors in Wales show a substantial demand for new recruits. In 2015, it is estimated that 18% of AME establishments in Wales had vacancies compared to 14% of establishments across all sectors. In total, there were 1,400 vacancies across the AME sectors in Wales. Over three-quarters of all AME vacancies in Wales were from SMEs (50-249 employees). It is estimated that 10% of AME employers in Wales had hard-to-fill vacancies with a total of 660 hard-to-fill vacancies reported. Two-thirds 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. . Employers in Wales have increased their provision of off-the-job training from 47% in 2013 to 49% in 2015, reflecting an increased awareness of

the need to tackle the problem themselves.

Drivers of skills change

The engineering 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.

Skill needs and gaps

26% of AME establishments in Wales reported skills gaps. The incidence of skills gaps increases by size of establishment, ranging from 20% of micro-sized establishments to 46% of large establishments.

It is estimated that 7% of the AME workforce in Wales 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 action taken to overcome skills gaps by AME employers was to increase higher qualification level recruitment and invest in training activity/spend or increase/expand trainee programmes.

The Degree Apprenticeship suite in this Engineering and Advanced Manufacturing framework has been developed to address critical skills gaps and shortages as detailed above and contains five pathways:

Pathway 1 Mechanical Engineering
Pathway 2 Electrical / Electronic Engineering
Pathway 3 Advanced Manufacturing
Pathway 4 Chemical Engineering
Pathway 5 Power Engineering

These have been identified as priorities to addressing the skills needs and gaps highlighted. The framework format will allow greater tailoring of qualifications to meet employers skills needs, so higher take-up levels are anticipated.

Aims and objectives of this framework (Wales)

To provide the engineering manufacturing and engineering sectors in Wales with high grade technicians and engineers who possess practical skills, combined with a higher education qualification to meet the environmental skills needs of employers and to help them to improve productivity and remain competitive.

Further objectives are to:

- provide apprentices with the technical knowledge, skills and competence at Level 4 in one framework to operate at higher technician level in manufacturing and engineering
- attract learners who wish to gain a higher education qualification while receiving a salary through a work based learning route
- attract learners from diverse backgrounds to help address the equality and diversity challenges faced by the sector, including those of an aging workforce
- develop apprentices employability skills making them more attractive to all employers whichever career they choose
- help improve recruitment and retention rates within the industry by offering appropriate career progression into high level jobs and training, working towards Engineering Technician (Eng Tech) status and Incorporated Engineer (IEng) status
- act as essential preparation for those who will eventually operate at Level 4, 5 and 6

Entry conditions for this framework

The Engineering and Advanced Manufacturing Degree Apprenticeship framework at Level 6 is primarily suitable for applicants who have either completed A levels appropriate for university entrance, or who may have already completed a related apprenticeship at Levels 3, 4 or 5.

Please note: Applicants for this apprenticeship framework are likely to be 19+ years.

Initial Assessment

It is likely that applicants may be asked to undertake a variety of tests which will include English, maths and problem solving, supported by an employer interview. These are not meant as a barrier to entry, but more to gauge the ability of the applicant to achieve the programme outcomes and to tailor the individual learning plan to meet their needs and those of the employer.

Rules to avoid repeating qualifications

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

Essential Skills Wales Key skills are accepted as alternatives to Essential Skills Wales qualifications, provided the Key Skills Certificate(s) attained are at the same level(s) as those specified for Essential Skills Wales qualifications. However, Key Skills can not be completed as part of this framework.

It is a requirement that entrants should have completed the Essential Skills in Communication, Application of Number and IT at Level 3 on entry to programmes that are listed in the framework. These could be achieved either through completing Essential/Key Skills at Level 3, or GCSEs / O levels grade C or above.

Level 6

Title for this framework at level 6

Engineering and Advanced Manufacturing Degree Apprenticeship

Pathways for the framework at level 6:

Pathway 1:	Mechanical Engineering Degree Apprenticeship
Pathway 2:	Electrical / Electronic Engineering Degree Apprenticeship
Pathway 3:	Advanced Manufacturing Engineering Degree Apprenticeship
Pathway 4:	Chemical Engineering Degree Apprenticeship
Pathway 5:	Integrated Engineering Degree Apprenticeship

Level 6, Pathway 1: Mechanical Engineering Degree Apprenticeship

Description of this pathway

Pathway duration approximately 36 months

The requirements for the Mechanical Engineering pathway are:

- Competence and knowledge applied degree qualification = 360 credits
- Essential Skills Wales (where not already satisfied) 3 x 6 credits =18 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)
Mechanical Engineer	Mechanical engineers undertake research and produce specifications for the installation, operation and maintenance of mechanical components or systems. This includes; engines, machines, aircraft, vehicle and ships' structures, building services and other mechanical items.
Mechanical Design Engineer	Mechanical design engineers are responsible for the process of designing new mechanical components and products, receiving and developing requirement specifications. They research and develop ideas and processes for new products, and improve the performance and design of existing products.

Qualifications

Competence qualifications available to this pathway

N/A

Knowledge qualifications available to this pathway

N/A

Combined qualifications available to this pathway

B1 – BEng (Hons) Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B1a	nil	University of South Wales	360	3600	X.

B2 – BSc (Hons) Mechanical Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B2a	nil	University of South Wales	360	3600	X.
B2b	nil	University of Wales Trinity Saint David	360	3600	

B3 – BEng (Hons) Mechanical and Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B3a	nil	University of Wales Trinity Saint David	360	3600	X.

B3 – BEng (Hons) Mechanical and Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B3a	nil	University of Wales Trinity Saint David	360	3600	X.

B4 – BEng (Hons) Materials Science					
No.	**Ref no.**	**Awarding organisation**	**Credit value**	**Guided learning hours**	**UCAS points value**
B4a	nil	University of Wales Trinity Saint David	360	3600	X.

B5 – BEng (Hons) Industrial Engineering Design - Mechanical					
No.	**Ref no.**	**Awarding organisation**	**Credit value**	**Guided learning hours**	**UCAS points value**
B5a	nil	Glyndwr University	360	3600	X.

Relationship between competence and knowledge qualifications

The This is a combined degree qualification that delivers both the knowledge and competence requirements with minimum of 360 credits as set out in the Engineering and Advanced Manufacturing degree apprenticeship learning and skills framework outcomes specification, March 2019.

Essential Skills

An apprenticeship framework must specify as a Welsh certificate requirement the expected achievement levels of Essential Skills in Communication and the Application of Number.

Where Essential Skills qualifications are specified in an apprenticeship framework, the apprenticeship framework must specify the acceptance of a recognised proxy qualification for Communication and Application of Number.

Communication

For the current list of acceptable proxy qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of SASW on the gov.wales website. Additional guidance materials can be found on the Knowledge Base section of the ACW website.

Does this framework require Communication achievement above the minimum SASW requirement? YES ☐ NO ☒

If YES, please state the grade/level required for English and give a brief **REASON** as to why this is required: Enter alternative grade/level requirements and reasons here.

Application of Number

For the current list of acceptable proxy qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of SASW on the gov.wales website. Additional guidance materials can be found on the Knowledge Base section of the ACW website.

Does this framework require Application of Number achievement above the minimum SASW requirement? YES ☐ NO ☒

If YES, please state the grade/level required for Maths and give a brief **REASON** as to why this is required: Enter alternative grade/level requirements and reasons here.

Inclusion of Digital Literacy (ICT)

Digital Literacy (ICT) is an **optional** framework requirement.

Is Digital Literacy a requirement in this framework? **YES** ☒ **NO** ☐

Digital Literacy (ICT)

Please note that there are currently no acceptable proxy qualifications for Digital Literacy (ICT).

For the current **minimum** grade/level requirements, please refer to the most recent version of SASW on the gov.wales website. Additional guidance materials can be found on the Knowledge Base section of the ACW website.

Does this framework require Digital Literacy (ICT) achievement above the minimum SASW requirement? YES ☐ **NO** ☒

If YES, please state the grade/level required for **Digital Literacy (**ICT) and give a brief **REASON** as to why this is required:

Enter alternative grade/level requirements and reasons here.

Progression routes into and from this pathway

Progression routes into this pathway include those who:

- have completed the Higher Apprenticeship at Level 4 or 5 and have undertaken a relevant Foundation Degree linked to the Honours degrees listed in this framework
- have completed a relevant HNC/HND that links to the Honours degrees listed in this framework.

Progression from this pathway for those who have completed a degree apprenticeship in Mechanical Engineering (Level 6):

- employment as a Mechanical Engineer in the job roles (or similar) as stated in this framework
- Masters Degrees in the relevant specialism.

UCAS points for this pathway:

(No requirement specified)

Employee rights and responsibilities

Please note that for Apprenticeship starts from 14/10/2016 onwards ERR is no longer a **mandatory** requirement in all frameworks.

However, it may still be included in some frameworks and where it is not explicitly stated that ERR is not a requirement then confirmation of an Apprentice's ERR achievement will still remain a requirement for Apprenticeship certification purposes.

Is ERR a requirement for this framework? **YES** ☐ **NO** ☒

Framework Developer to complete with relevant info

Level 6, Pathway 2: Electrical / Electronic Engineering Degree Apprenticeship

Description of this pathway

The requirements for the Electrical / Electronic Engineering pathway are:

- Competence and knowledge applied degree qualification = 360 credits
- Essential Skills Wales (where not already satisfied) 3 x 6 credits =18 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)
Electrical Engineer	Electrical engineers undertake research, direct installation and construction and manage the operation and maintenance of electrical equipment, power stations, building control systems and other electrical products and systems.
Electronic Engineer	Electronics engineers install and maintain electronic components, software, products, or systems for commercial, industrial, medical, military, or scientific applications.
Electrical / Electronic Design Engineer	Electrical / electronic design engineers are responsible for developing system specifications and layouts and the process of designing new electrical and electronic systems for various applications. They research systems ideas and develop system designs using specialised design software.

Qualifications

Competence qualifications available to this pathway

N/A

Knowledge qualifications available to this pathway

N/A

Combined qualifications available to this pathway

B1 – BEng (Hons) Electrical and Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B1a	nil	University of South Wales	360	3600	X.

B2 – BSc (Hons) Electrical and Electronic Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B2a	nil	University of South Wales	360	3600	X.
B2b	nil	University of Wales Trinity Saint David	360	3600	

B3 – BSc (Hons) Semiconductor Technologies

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B3a	nil	University of South Wales	360	3600	X.

B4 – BEng (Hons) Industrial Engineering Design - Electrical & Electronic

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B4a	nil	Glyndwr University	360	3600	X.

Relationship between competence and knowledge qualifications

Framework Developer to complete with relevant info

Essential Skills

An apprenticeship framework must specify as a Welsh certificate requirement the expected achievement levels of Essential Skills in Communication and the Application of Number.

Where Essential Skills qualifications are specified in an apprenticeship framework, the apprenticeship framework must specify the acceptance of a recognised proxy qualification for Communication and Application of Number.

Communication

For the current list of acceptable proxy qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of SASW on the gov.wales website. Additional guidance materials can be found on the Knowledge Base section of the ACW website.

Does this framework require Communication achievement above the minimum SASW requirement? YES ☐ NO ☒

If YES, please state the grade/level required for English and give a brief **REASON** as to why this is required: Enter alternative grade/level requirements and reasons here.

Application of Number

For the current list of acceptable proxy qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of SASW on the gov.wales website. Additional guidance materials can be found on the Knowledge Base section of the ACW website.

Does this framework require Application of Number achievement above the minimum SASW requirement? YES ☐ NO ☒

If YES, please state the grade/level required for Maths and give a brief **REASON** as to why this is required: Enter alternative grade/level requirements and reasons here.

Inclusion of Digital Literacy (ICT)

Digital Literacy (ICT) is an **optional** framework requirement.

Is Digital Literacy a requirement in this framework? **YES** ☒ **NO** ☐

Digital Literacy (ICT)

Please note that there are currently no acceptable proxy qualifications for Digital Literacy (ICT).

For the current **minimum** grade/level requirements, please refer to the most recent version of SASW on the gov.wales website. Additional guidance materials can be found on the Knowledge Base section of the ACW website.

Does this framework require Digital Literacy (ICT) achievement above the minimum SASW requirement? YES ☐ **NO** ☒

If YES, please state the grade/level required for **Digital Literacy (**ICT) and give a brief **REASON** as to why this is required:

Enter alternative grade/level requirements and reasons here.

Progression routes into and from this pathway

A Progression routes into this pathway include those who:

have completed a relevant Higher Apprenticeship at Level 4 or 5 or have undertaken a Foundation Degree linked to the Honours degrees listed in this framework.

have completed a relevant HNC/HND that links to the Honours degrees listed in this framework.

Progression from this pathway for those who have completed a degree apprenticeship in Electrical / Electronic Engineering (Level 6):

- employment as an Electrical / Electronic Engineer in the job roles (or similar) as stated in this framework
- Masters degrees in the relevant specialism.

UCAS points for this pathway:

(No requirement specified)

Employee rights and responsibilities

Please note that for Apprenticeship starts from 14/10/2016 onwards ERR is no longer a **mandatory** requirement in all frameworks.

However, it may still be included in some frameworks and where it is not explicitly stated that ERR is not a requirement then confirmation of an Apprentice's ERR achievement will still remain a requirement for Apprenticeship certification purposes.

Is ERR a requirement for this framework? **YES** ☐ **NO** ☒

Level 6, Pathway 3: Advanced Manufacturing Engineering Degree Apprenticeship

Description of this pathway

Pathway duration approximately 36 months

The requirements for the Advanced Manufacturing Engineering pathway are:

Competence and knowledge applied degree qualification = 360 credits
Essential Skills Wales (where not already satisfied) 3 x 6 credits =18 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)
Manufacturing Engineer	Manufacturing Engineers design manufacturing systems, develop, evaluate and improve manufacturing processes by applying knowledge of product design, fabrication, assembly, tooling, materials and by studying product and manufacturing methods.

Qualifications

Competence qualifications available to this pathway

N/A

Knowledge qualifications available to this pathway

Combined qualifications available to this pathway

B1 – BEng (Hons) Advanced Manufacturing Operations

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B1a	nil	University of Wales Trinity Saint David	360	3600	X.

B2 – BEng (Hons) Manufacturing Systems Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B2a	nil	University of Wales Trinity Saint David	360	3600	X.

B3 – BEng (Hons) Advanced Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B3a	nil	Swansea University	360	3600	X.

B4 – BEng (Hons) Aeronautical and Manufacturing Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B4a	nil	Swansea University	360	3600	X.

B5 – BEng (Hons) Production Engineering

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B5a	nil	Glyndwr University	360	3600	X.

Relationship between competence and knowledge qualifications

Framework Developer to complete with relevant info

Essential Skills

An apprenticeship framework must specify as a Welsh certificate requirement the expected achievement levels of Essential Skills in Communication and the Application of Number.

Where Essential Skills qualifications are specified in an apprenticeship framework, the apprenticeship framework must specify the acceptance of a recognised proxy qualification for Communication and Application of Number.

Communication

For the current list of acceptable proxy qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of SASW on the gov.wales website. Additional guidance materials can be found on the Knowledge Base section of the ACW website.

Does this framework require Communication achievement above the minimum SASW requirement? YES ☐ NO ☒

If YES, please state the grade/level required for English and give a brief **REASON** as to why this is required: Enter alternative grade/level requirements and reasons here.

Application of Number

For the current list of acceptable proxy qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of SASW on the gov.wales website. Additional guidance materials can be found on the Knowledge Base section of the ACW website.

Does this framework require Application of Number achievement above the minimum SASW requirement? YES ☐ NO ☒

If YES, please state the grade/level required for Maths and give a brief **REASON** as to why this is required: Enter alternative grade/level requirements and reasons here.

Inclusion of Digital Literacy (ICT)

Digital Literacy (ICT) is an **optional** framework requirement.

Is Digital Literacy a requirement in this framework? **YES** ☒ **NO** ☐

Digital Literacy (ICT)

Please note that there are currently no acceptable proxy qualifications for Digital Literacy (ICT).

For the current **minimum** grade/level requirements, please refer to the most recent version of SASW on the gov.wales website. Additional guidance materials can be found on the Knowledge Base section of the ACW website.

Does this framework require Digital Literacy (ICT) achievement above the minimum SASW requirement? YES ☐ **NO** ☒

If YES, please state the grade/level required for **Digital Literacy (**ICT) and give a brief **REASON** as to why this is required:

Enter alternative grade/level requirements and reasons here.

Progression routes into and from this pathway

Progression routes into this pathway include those who:

have completed a relevant Higher Apprenticeship at Level 4 or 5 or have undertaken a Foundation Degree linked to the Honours degrees listed in this framework.

have completed a relevant HNC/HND that links to the Honours degrees listed in this framework.

Progression from this pathway for those who have completed a degree apprenticeship in Advanced Manufacturing Engineering (Level 6):

- employment as a Manufacturing Engineer in the job roles (or similar) as stated in this framework
- Masters degrees in the relevant specialism.

UCAS points for this pathway:

(No requirement specified)

Employee rights and responsibilities

Please note that for Apprenticeship starts from 14/10/2016 onwards ERR is no longer a **mandatory** requirement in all frameworks.

However, it may still be included in some frameworks and where it is not explicitly stated that ERR is not a requirement then confirmation of an Apprentice's ERR achievement will still remain a requirement for Apprenticeship certification purposes.

Is ERR a requirement for this framework? **YES** ☐ **NO** ☒

Level 6, Pathway 4: Chemical Engineering Degree Apprenticeship

Description of this pathway

Framework Developer to complete with relevant info

Pathway duration approximately 36 months

The requirements for the Chemical Engineering pathway are:

- Competence and knowledge applied degree qualification = 360 credits
- Essential Skills Wales (where not already satisfied) 3 x 6 credits =18 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)
Chemical Engineer	Chemical engineers apply the principles of chemistry, biology, physics, and mathematics to solve problems that involve the production or use of chemicals, fuel, drugs, food, and other products. They design new processes and equipment for manufacturing and maintain and optimise existing plant.
Ordnance, Munitions & Explosives (OME) Engineer	OME engineers design, test and coordinate development of chemical based explosive ordnance material to meet specifications. They carry out a range of technical, engineering and scientific activities which includes laboratory based investigations, energetic studies and scientific experimentation.

Qualifications

Competence qualifications available to this pathway

N/A

Knowledge qualifications available to this pathway

N/A

Combined qualifications available to this pathway

B1 – BSc (Hons) Ordnance, Munitions & Explosives (Technical Research & Development)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B1a	nil	University of Wales Trinity Saint David	360	3600	X.

B2 – BEng (Hons) Ordnance, Munitions & Explosives (Safety)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B2a	nil	University of Wales Trinity Saint David	360	3600	X.

B3 – BEng (Hons) Ordnance, Munitions & Explosives (Manufacturing & Processing)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B3a	nil	University of Wales Trinity Saint David	360	3600	X.

B4 – BEng (Hons) Ordnance, Munitions & Explosives (Breakdown & Disposal)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B4a	nil	University of Wales Trinity Saint David	360	3600	X.

B5 – BEng (Hons) Ordnance, Munitions & Explosives (Test & Evaluation)

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B5a	nil	University of Wales Trinity Saint David	360	3600	X.

Relationship between competence and knowledge qualifications

Framework Developer to complete with relevant info

Essential Skills

An apprenticeship framework must specify as a Welsh certificate requirement the expected achievement levels of Essential Skills in Communication and the Application of Number.

Where Essential Skills qualifications are specified in an apprenticeship framework, the apprenticeship framework must specify the acceptance of a recognised proxy qualification for Communication and Application of Number.

Communication

For the current list of acceptable proxy qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of SASW on the gov.wales website. Additional guidance materials can be found on the Knowledge Base section of the ACW website.

Does this framework require Communication achievement above the minimum SASW requirement? YES ☐ NO ☒

If YES, please state the grade/level required for English and give a brief **REASON** as to why this is required: Enter alternative grade/level requirements and reasons here.

Application of Number

For the current list of acceptable proxy qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of SASW on the gov.wales website. Additional guidance materials can be found on the Knowledge Base section of the ACW website.

Does this framework require Application of Number achievement above the minimum SASW requirement? YES ☐ NO ☒

If YES, please state the grade/level required for Maths and give a brief **REASON** as to why this is required: Enter alternative grade/level requirements and reasons here.

Inclusion of Digital Literacy (ICT)

Digital Literacy (ICT) is an **optional** framework requirement.

Is Digital Literacy a requirement in this framework? **YES** ☒ **NO** ☐

Digital Literacy (ICT)

Please note that there are currently no acceptable proxy qualifications for Digital Literacy (ICT).

For the current **minimum** grade/level requirements, please refer to the most recent version of SASW on the gov.wales website. Additional guidance materials can be found on the Knowledge Base section of the ACW website.

Does this framework require Digital Literacy (ICT) achievement above the minimum SASW requirement? YES ☐ **NO** ☒

If YES, please state the grade/level required for **Digital Literacy (**ICT) and give a brief **REASON** as to why this is required:

Enter alternative grade/level requirements and reasons here.

Progression routes into and from this pathway

Progression routes into this pathway include those who:

have completed a relevant Higher Apprenticeship at Level 4 or 5 or have undertaken a Foundation Degree linked to the Honours degrees listed in this framework.

have completed a relevant HNC/HND that links to the Honours degrees listed in this framework.

Progression from this pathway for those who have completed a degree apprenticeship in Chemical Engineering (Level 6):

- employment as a Chemical Engineer in the job roles (or similar) as stated in this framework
- Masters degrees in the relevant specialism.

UCAS points for this pathway:

(No requirement specified)

Employee rights and responsibilities

Please note that for Apprenticeship starts from 14/10/2016 onwards ERR is no longer a **mandatory** requirement in all frameworks.

However, it may still be included in some frameworks and where it is not explicitly stated that ERR is not a requirement then confirmation of an Apprentice's ERR achievement will still remain a requirement for Apprenticeship certification purposes.

Is ERR a requirement for this framework? **YES** ☐ **NO** ☒

Level 6, Pathway 5: Integrated Engineering Degree Apprenticeship

Description of this pathway

Pathway duration approximately 36 months

The requirements for the Integrated Engineering pathway are:

Competence and knowledge applied degree qualification = 360 credits
Essential Skills Wales (where not already satisfied) 3 x 6 credits =18 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)
Integrated Engineer	Integrated engineers undertake research and produce specifications for the installation, operation and maintenance of integrated mechanical and electrical / electronic components & systems. This includes; engines, machines, aircraft, vehicle and ships structures and other combined items.

Qualifications

Competence qualifications available to this pathway

N/A

Knowledge qualifications available to this pathway

N/A

Combined qualifications available to this pathway

B1 – BEng (Hons) Integrated Engineering					
No.	**Ref no.**	**Awarding organisation**	**Credit value**	**Guided learning hours**	**UCAS points value**
B1a	nil	Cardiff University	360	3600	X.

Relationship between competence and knowledge qualifications

This is a combined degree qualification that delivers both the knowledge and competence requirements with minimum of 360 credits as set out in the Engineering and Advanced Manufacturing degree apprenticeship learning and skills framework outcomes specification, March 2019.

Essential Skills

An apprenticeship framework must specify as a Welsh certificate requirement the expected achievement levels of Essential Skills in Communication and the Application of Number.

Where Essential Skills qualifications are specified in an apprenticeship framework, the apprenticeship framework must specify the acceptance of a recognised proxy qualification for Communication and Application of Number.

Communication

For the current list of acceptable proxy qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of SASW on the gov.wales website. Additional guidance materials can be found on the Knowledge Base section of the ACW website.

Does this framework require Communication achievement above the minimum SASW requirement? YES ☐ NO ☒

If YES, please state the grade/level required for English and give a brief **REASON** as to why this is required: Enter alternative grade/level requirements and reasons here.

Application of Number

For the current list of acceptable proxy qualifications and appropriate **minimum** grade/level requirements, please refer to the most recent version of SASW on the gov.wales website. Additional guidance materials can be found on the Knowledge Base section of the ACW website.

Does this framework require Application of Number achievement above the minimum SASW requirement? YES ☐ NO ☒

If YES, please state the grade/level required for Maths and give a brief **REASON** as to why this is required: Enter alternative grade/level requirements and reasons here.

Inclusion of Digital Literacy (ICT)

Digital Literacy (ICT) is an **optional** framework requirement.

Is Digital Literacy a requirement in this framework? **YES** ☐ **NO** ☒

Digital Literacy (ICT)

Please note that there are currently no acceptable proxy qualifications for Digital Literacy (ICT).

For the current **minimum** grade/level requirements, please refer to the most recent version of SASW on the gov.wales website. Additional guidance materials can be found on the Knowledge Base section of the ACW website.

Does this framework require Digital Literacy (ICT) achievement above the minimum SASW requirement? YES ☐ **NO** ☒

If YES, please state the grade/level required for **Digital Literacy (**ICT) and give a brief **REASON** as to why this is required:

Progression routes into and from this pathway

Progression routes into this pathway include those who:

have completed the Higher Apprenticeship at Level 4 or 5 and have undertaken a relevant Foundation Degree linked to the Honours degrees listed in this framework have completed a relevant HNC/HND that links to the Honours degrees listed in this framework. Progression from this pathway for those who have completed a degree apprenticeship in Industrial Engineering (Level 6):

employment as an Industrial Engineer in the job roles (or similar) as stated in this framework Masters Degrees in the relevant specialism.

UCAS points for this pathway:

(No requirement specified)

Employee rights and responsibilities

Please note that for Apprenticeship starts from 14/10/2016 onwards ERR is no longer a **mandatory** requirement in all frameworks.

However, it may still be included in some frameworks and where it is not explicitly stated that ERR is not a requirement then confirmation of an Apprentice's ERR achievement will still remain a requirement for Apprenticeship certification purposes.

Is ERR a requirement for this framework? **YES** ☐ **NO** ☒

Delivery and assessment

Employee Rights and Responsibilities (ERR) is no longer compulsory, but Semta recommends that all apprentices receive it as part of their induction.

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

Method 1 - Qualifications

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

Training hours: 15

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 Wales.

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.

Pathway name

Framework Developer to complete with relevant info

Framework Developer to complete with relevant info

☐

Enter alternative grade/level requirements and reasons here.

Enter alternative grade/level requirements and reasons here.

☒☐

Framework Developer to complete with relevant info

(No requirement specified)

☐ ☒

Pathway name

☐ ☒

Enter alternative grade/level requirements and reasons here.

Enter alternative grade/level requirements and reasons here.

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(No requirement specified)

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Pathway name

☐ ☒

: Enter alternative grade/level requirements and reasons here.

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Enter alternative grade/level requirements and reasons here.

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☐ ☒

(No requirement specified)

☐ ☐

Pathway name

☐

Enter alternative grade/level requirements and reasons here.

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: Enter alternative grade/level requirements and reasons here.

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☐

(No requirement specified)

☐ ☒

The remaining sections apply to all levels and pathways within this framework.

How equality and diversity will be met

Cogent, Improve, ProSkills and Semta recognise the business benefits of having apprentices from a wide variety of diverse backgrounds to contribute to the talent pool. In particular the sector faces an aging workforce and the probability of skill shortages, therefore, we must look to attract new entrants from a much more diverse recruitment pool.

We are committed to ensuring that equality and diversity drives all aspects of apprentice selection and recruitment and recognise that this is a challenge in a sector which is traditionally white and male-dominated:

• Process and Manufacturing Industries workforce historically has a poor image and a misconception that jobs in these industries are carried out in dark, dirty and potentially dangerous environments. On the contrary, nowadays Process and Manufacturing Industries are very high tech and largely controlled by sophisticated computer technology.
• Science, engineering and technology - women make up 50% of the labour market, yet they make up less than 20% of the labour market in science, engineering and technology despite the Women into Science and Engineering projects run in the past.

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.

As partners in this apprenticeship we are taking the following actions to help address these imbalances:

Cogent
• Introduced a series of industry specific case studies and Careers Pathways on the Cogent Careers web site (www.cogent-careers.com) to encourage people from all backgrounds to enter the nuclear industry
• Works very closely with the National Skills Academy for Nuclear to promote various initiatives such as Energy Foresight within schools (www.nuclear.nsacademy.co.uk)
• Regularly supports regional/national careers fairs/skills events to promote apprenticeships, providing an ideal opportunity to address issues faced by women and ethnic minorities
• Works with representative groups such as the United Kingdom Resource Centre, engaging with their Women in Science and Engineering Work programmes.

National Skills Academy Food and Drink (formerly Improve)
• Ongoing monitoring of data to identify any issues and intervene where necessary
• Developing careers materials that are accessible to all

• Identifying a process to make it easier for potential apprentices to gain information, e.g.by NSAFD's web site.

Semta

• Signing up to the Government's United Kingdom Resource Centre (UKRC) leading body for advanced gender equality in science, engineering and technology and the CEO's charter in a bid to step up female recruitment
• Semta's careers and qualifications centre includes an emag and articles encouraging more women into science and engineering
• Statement on our website that "Semta Apprenticeships Service encourages and supports equal opportunities in the engineering and manufacturing industry. Applications for apprenticeship positions are encouraged from all sections of the community to ensure the industry's workforce reflects the communities in which companies are based. Applications from people with disabilities are encouraged, however it is recognised that the nature of some employment may limit access for those with certain disabilities".
• Attend national careers fairs to promote science and engineering to a wide audience.

Apprenticeships are seen as a vital route to encourage and facilitate, a greater diversity of individuals into the industry, therefore entry conditions to this framework are extremely flexible and mentoring has been included to contribute towards increasing retention and achievement rates.

Semta as the Issuing Authority expects providers and employers to comply with the Equality Act 2010 to ensure that applicants are not discriminated against in terms of entry to and promotion within the sector using the 9 protected characteristics of:

1. Age
2. Disability
3. Gender
4. Gender reassignment
5. Marriage and civil partnerships
6. Pregnancy and maternity
7. Race
8. Religion and Belief
9. Sexual orientation

Download the guidance on the Equality Act here:
www.equalityhumanrights.com/advice-and-guidance/new-equality-act-guidance/

Cogent, Improve, ProSkills and Semta will monitor take up and achievement through the Higher Apprenticeship Steering Group and take steps to address any barriers to take up and achievement as part of our Sector Qualifications Strategies.

On and off the job training

Summary of on- and off-the-job training

For the Apprenticeship, the hours outlined in the pathways may vary depending on previous experience and attainment of the apprentice. Where a learner enters an apprenticeship agreement having previously attained or acquired some or all of the appropriate competence or knowledge, this prior learning needs to be recognised and documented using the Recognition of Prior Learning (RPL) procedures.

The amount of 'on-the-job' training required to complete the apprenticeship under the apprenticeship agreement may then be reduced accordingly, provided the total numbers of'on-the-job' hours for this framework can be verified for apprenticeship certification. Those apprentices who commence training under a new apprenticeship agreement with a new employer may bring a range of prior experience with them. When an apprentice can claim 5% or more hours towards the 'on-the-job' framework total through prior learning acquired from previous full-time education, employment or other vocational programme, then the apprentice's learning programme should include "customisation".

Training providers and colleges are encouraged to identify additional 'on-the-job' training programmes that customise the learning to the new workplace. Customisation programmes may include selecting appropriate additional unit(s) from qualifications, or relevant units recognised as Quality Assured Lifelong Learning (QALL) through a CQFW recognised body, or follow Essential Skills at a level higher than that specified in the framework, or other competency-based qualifications/units relevant to the workplace.

Note
The Higher Apprenticeship framework for Advanced Manufacturing primarily addresses the training needs of apprentices involved in engineering and manufacturing. In many cases this means those who work in an engineering manufacturing environment. Having discussed the requirement for Essential Skills, it was felt that all three qualifications would be required for a framework at this level. For an apprentice who has already achieved the relevant qualification, they must have been certificated within 5 years from the date of application for the Higher Apprenticeship Certificate.

Any off-the-job training undertaken before the apprentice started may count towards the off-the-job training required for the apprenticeship if it was undertaken in relation to an accredited qualification contained in the framework for which an apprenticeship certificate is applied for. Both on and off-the-job training hours need to be planned, reviewed and jointly evaluated between the apprentice, training instructor, tutor or lecturer and workplace supervisor and where relevant the apprentices's mentor. The apprentice should have access to training support at all times whether carrying out on or off-the job training.

On and off-the job training hours should be delivered through a variety of learning methods, individual and group teaching; team-working; e-learning; distance learning; coaching; mentoring; feedback and assessment.

Evidence requirements for claiming an Apprenticeship Certificate
FISSS (The Federation of Industry Sector Skills & Standards), who were formerly known as The Alliance of Sector Skills Councils, have recently been appointed as the certificating authority for Welsh Apprenticeships. FISSS have developed a new online system called ACW (Apprenticeship Certification Wales) for Welsh Apprenticeship certification which superseded the paper based

system from 2nd September 2013 onwards. This means that all Apprenticeship completion certificates must be claimed via the new ACW online system from this date onwards.

If you are a Training Provider claiming an Apprenticeship completion certificate on behalf of an apprentice then you will need to register on ACW for a user name and password before you are able to register apprentices and claim certification.

If you are an apprentice claiming an Apprenticeship completion certificate for yourself then you will need to go to the ACW for an application form.

Off-the-job training

The minimum training hours for each pathway are summarised in the pathway descriptions.

How this requirement will be met

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 tutoring, e-learning, distance learning, coaching, mentoring, feedback and assessment, collaborative/networked learning with peers or guided study.

Providers will not be required to record individual on and off the job training hours. However for certification purposes, the provider will be required to declare that the apprentice has completed the on and off the job training hours requirement as set out in this Apprenticeship framework.

Training 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.

Previous attainment
Where a learner enters an apprenticeship agreement having previously attained parts or all of the relevant qualifications, this prior learning needs to be recognised.

For apprentices who have already achieved the relevant qualifications, they must have been certificated within 5 years of applying for the Higher Apprenticeship Certificate.

Previous experience
Where a learner enters an apprenticeship agreement with previous work-related experience, this prior learning needs to be recognised. To count towards apprenticeship certification, previous experience must be recorded using the appropriate Awarding Organisation's 'Recognition of Prior Learning' procedures and the hours recorded may then count towards the off-the-job hours required to complete the apprenticeship.

For apprentices with prior uncertificated learning experience, the off-the-job learning must have been acquired within five years of application for the Apprenticeship Certificate or have been

continuously employed in the relevant job role in the industry for five years duration.

Foundation Degrees
All of the Foundation Degrees in this Framework have been supported by employers. They also meet the guidance relating to the minimum credit values for the Higher Education Credit Framework for Wales. The number of training hours required to complete the qualification will vary significantly depending on a number of factors including the academic starting point of the apprentice, the units/modules selected and the bespoke delivery and assessment model agreed between the education institution and the employer. Whilst this Framework document has specified the number Credit Accumulation and Transfer System (CATS) credits. It is also understood that many of the Higher Education qualifications included conform to the European Credit Transfer and Accumulation System (ECTS) where 5 ECTS credits are equivalent to 10 CATS credits.

In the qualifications section of the framework document we have included the Awarding University. In many cases the delivery of the Foundation Degree will be franchised out to one or more Colleges of Further Education. Please contact the relevant Awarding University for details of delivery locations.

Off-the-job training
It is recommended that a mentor is appointed for each apprentice to review their progress on a regular basis and all apprentices are entitled to receive at least one hour a week mentoring and this is included in the off-the-job training hours. It is recommended that a mentor may well exceed this one hour per week contact time as and when required with the higher apprentice. This activity will take place off-the-job and is inclusive within the off-the-job hours quoted in the previous section.

Evidence of off-the-job hours and off-the-job training must be formally recorded, either in a diary, workbook, portfolio or be verified by attendance records. This evidence needs to be checked and signed by the assessor and employer.

Evidence of off-the-job training The range of evidence requirements are as follows:

1. Copy of Awarding Organisation certificates for Communication & Application of Number (Essential Skills Wales) or Key skills at the same level as Essential Skills Wales or Essential Skills Qualifications (ESQ)*
2. Copy of the Awarding Organisation certificate for the ERR qualification or completed countersigned ERR workbook (if completed)
3. Copy of the Awarding Organisation certificate for the knowledge qualification

*Note:
Apprentices registered on a SASW Apprenticeship on or after 1st January 2016 must complete the required mandatory new Essential Skills Qualifications (ESQ) at Level 1: Essential Communication Skills and Essential Application of Number Skills and Essential Digital Literacy Skills. Apprentices who have enrolled prior to 31st December 2015 can continue to work towards either Key Skills / Essential Skills Wales (AON, Comms, and ICT / Digital Literacy) as required by the framework, which will be accepted within SASW.

For apprentices registered on or after 14th October 2016, recognised proxies for the new ESQ qualifications are accepted - these are listed in the front of this framework document. This includes the Welsh Baccalaureate Qualification (WBQ) with ESQ and GCSE components.

Candidates undertaking the new WBQ will not be required to provide individual certificates as evidence.

Apprenticeship starts before the 14th October 2016 must continue to meet the 2013 SASW requirements for Essential Skills. Essential Skills Wales qualifications achieved in the context of the Welsh Baccalaureate Qualification (WBQ) can be accepted as long as the specific certification of the title(s) and level(s) of those ESW/ESQ qualifications is provided. The WBQ certificate itself does not provide this specific evidence.

Wider Key Skills are no longer required for this framework.

On-the-job training

Refer to each pathway description for a summary of the minimum on-the-job training hours

Occupational Competence Qualifications - on-the-job training.

Again working closely with employers across the Engineering, Manufacturing and Advanced Technology Sectors, Semta has ensured that the competence qualifications included in the Framework are flexible enough through a core and options approach, to be able to encompass a wide range of occupational areas that have been requested by employers and articulated in the Framework pathways such as:

- Product and System Design
- New Product Introduction
- Testing and Commissioning
- Production Planning and Control
- Project Planning and Management
- Quality Control and Assurance
- Equipment and Systems Maintenance
- Compliance, Risk and Safety Assessment
- Technical Support, Sales and Marketing

As well as a range of technical engineering and manufacturing options the qualifications may also include a number of generic competencies covering areas such as:

- Problem Solving
- Implementing Change
- Supporting Team Members
- Developing Working Relationships
- Supporting Learning and Development
- Managing processes, systems and/or people

The benefits to the employer and apprentice of having access to range of occupational competence unit options linked to a broad selection of technical knowledge and understanding qualifications is that they can:
• select the most appropriate balance and mix of technical engineering/manufacturing units along with generic and transferable knowledge and understanding units that meet the requirements of the business, the relevant job role and the apprentice’s current capabilities, learning styles and career aspirations

- design a bespoke work place training and development plan to ensure that the apprentice:

    - gains a broad understanding of business processes and theoretical concepts
    - has the opportunity to apply the knowledge and understanding in the workplace
    - develops a good understanding of their workplace including people, products, processes and procedures
    - is able to acquire the relevant job role competencies in order to ensure a smooth transition into the working environment on completion of the apprenticeship programme
    - has the potential for career progression and access to further /higher education programmes.

How this requirement will be met

The recommended on-the-job hours are described in each pathway description.
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 guided learning in an engineering manufacturing context might be:

- environmental awareness
- employability skills
- team working and communications
- task-specific workplace instructions or team briefings
- taught sessions by the workplace line manager/instructor
- induction where activities are covered within normal work duties
- coaching of apprentices

Providers will not be required to record individual on the job training hours. However for certification purposes, the provider will be required to declare that the apprentice has completed the on-the-job training hour requirement as set out in this Apprenticeship framework.

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.

Apprentices who commence training under a new apprenticeship agreement with a new employer may bring a range of prior experience with them. When an apprentice can claim a percentage or more hours towards the on-the-job framework total through prior learning acquired from previous full-time education, employment or other vocational programmes, then the apprentice's learning programme should include 'customisation'.

Training providers are encouraged to identify additional on-the-job training programmes that customise the learning to the new workplace. Customisation programmes may include selecting appropriate additional unit(s) from qualifications, or relevant units recognised as Quality Assured Lifelong Learning (QALL) through a CQFW recognised body, following Essential Skills at a level higher than that specified in the framework or other competency-based qualifications/units relevant to the workplace.

For apprentices who have already achieved the relevant qualifications, they must have been certificated within 5 years from the date of application for the Apprenticeship Certificate or have been continuously employed in the industry for 5 years. Job roles within the manufacturing and engineering Industry require a thorough level of technical competence and knowledge, which will be undertaken through work-based training, practice and experience.

All apprentices are required to generate evidence in the work place 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 organisation's 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.

Wider key skills assessment and recognition

While Wider Key Skills are not a **mandatory** part of the framework, training providers are encouraged to provide apprentices the opportunity to achieve them.

For this framework, there are natural opportunities for Wider Key Skills to be embedded within the mandatory units of the following qualifications:

Enter Qualification Names

Improving own learning and performance

Give examples - signpost to specific units in framework qualifications that would meet these requirements

Working with others

Give examples - signpost to specific units in framework qualifications that would meet these requirements

Problem solving

Give examples - signpost to specific units in framework qualifications that would meet these requirements

apprenticeship
FRAMEWORK

For more information visit-
www.acwcerts.co.uk/framework_library