



Part of the
Enginuity Group

EPA Apprentice Guidance

End-point Assessment Apprentice Guidance for:

Level 4 Engineering Manufacturing Technician

Standard Reference: ST0841

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Document Amendments

Amendment Made	Issue Number	Effective From
New document	1.0	29-10-2020
Amendments to Apprentice Manual (P17 Gateway Checklist Table amendment)	2.0	13-01-2021
Updated document tables	2.1	23-08-2022
Corrected text input boxes	3	13-03-2023



About EAL

Since 1964, EAL (Excellence, Achievement and Learning) has been awarding superior vocational qualifications and apprenticeship components for engineering, building services and related sectors.

EAL has been at the heart of new apprenticeship standards development, supporting employer trailblazer development groups for key industry occupations since 2013, when the reforms began. With our long-standing tradition of being closer to industry and designing qualifications that reflect this close partnership, EAL is perfectly positioned to guide the employer development groups' work. Our expertise, knowledge and support ensures the new standards meet the needs of all employers, from SMEs to multinationals, and provide learners with the best possible start to their careers.

EAL is an end-point assessment organisation (EPAO) and is listed on the Register of End-Point Assessment Organisations (RoEPAO).

Equal Opportunities and Diversity

EAL expects all employers to enable apprentices to have equal access to training and assessment for end-point assessment (EPA) in line with the Equality Act 2010 and protected characteristics. Further details can be found in the EAL Equal Opportunities and Diversity Policy: <http://www.eal.org.uk/centre-support/centre-support/policies-and-important-documents>

Customer Service and Feedback

Customer service is a fundamental part of EAL's commitment to you. EAL aims to ensure that all customers receive a high quality efficient service. We are always interested in feedback and if you have any comments or feedback on our qualifications, products or services, please contact the Customer Services Team:

EAL Customer Experience

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Document Purpose

To ensure a consistent approach when carrying out the practical observation, knowledge test, professional review across all independent assessment panel members, assessment sites, apprentices and assessment decisions.

This document, and its contents, will be used to **guide** independent assessors, panel members and internal quality assurers on the outcome of the assessment decisions. Please read the guidance notes, ensure the correct information is recorded and keep the document securely stored.

It supports the Apprentice Recording Document, which has been developed to record the outcome of the, practical observation, knowledge test, professional review and the overall grade. The Apprentice Recording Document is an auditable record of the End Point Assessment (EPA) activity.

This document should be used in conjunction with EAL's End-point Assessment Policies and Procedures Handbook.

Overview

The EPA is designed to enable you to demonstrate that you are fully conversant in the knowledge, skills and behaviours (KSBs) expected of individuals working at this level. It is designed to provide assessors with a holistic view of you, and to allow them to assess to what extent you meet, or exceed, the level 4 Engineering Manufacturing Technician apprenticeship standard. The EPA must be completed within 12 weeks after you have met the EPA gateway requirements.

The Apprenticeship Standard and End-point Assessment Plan defines when, what, who and how the EPA is assessed. All those participating and delivering this EPA, which includes you, assessors and employers, **must** refer to the following principle documents for the full details of the EPA requirements:

Engineering Manufacturing Technician

- Apprenticeship Standard – STO841 (approved for delivery 5th December 2019).
- End-point Assessment Plan.

Both of which are currently available here: <https://www.instituteforapprenticeships.org/apprenticeship-standards/engineering-manufacturing-technician-v1-0>

Whilst elements of the Apprenticeship Standard and End-point Assessment Plan have been reproduced within this document under the following licence: <http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>, it is the responsibility of the assessors to ensure that you are being assessed against the correct version of the Apprenticeship Standard and End-point Assessment Plan.

End-point Assessment Gateway

Your Employer must satisfy themselves that apprentices are ready for their end-point assessment, this is evidenced whereby the apprentice is working at, or above, the level set out in the occupational standard.

The independent end-point assessment is synoptic, that is, it takes an overview of an apprentice's competence. It is important, therefore, that this should only take place when the employer is confident that the apprentice has met all the knowledge, skills and behaviours as set out in the standard. Once the employer is satisfied apprentice has demonstrated full competence and that all criteria of the standard have been met the apprentice can progress to the end-point assessment via the apprenticeship gateway, which is a decision point. Before an apprentice can pass through the gateway (decision point) for end-point assessment, they must in addition to being competent across the knowledge, skills and behaviours required by the Engineering Manufacturing Technician Standard.

In addition, you (the apprentice) must have completed the following gateway requirements prior to beginning the EPA gateway:

Achieved English and Mathematics level 2 as a minimum. For those with an education, health and care plan or legacy statement, the apprenticeship's English and Mathematics minimum requirements is Entry level 3 and British Sign Language qualification are an alternative to English qualifications for whom this is their primary language.

For level 3 apprentices and above apprentices without English and Mathematics at Level 2 must achieve level 2 prior to taking your EPA

All apprentices (from the Aerospace and Non-Aerospace sectors) must achieve the following approved qualifications as mandated in the occupational standard:

- Level 4 Higher National Certificate in Engineering or Level 4 Higher National Certificate in Manufacturing Operations

For the Aerospace sector only, apprentices must also achieve the following qualifications mandated in the occupational standard:

- EAL Level 2 Diploma in the Aerospace and Aviation Engineering (Foundation Competence)
- EAL Level 4 Diploma in Engineering and Advanced Manufacturing (Development Competence)

For the observation with questioning: the employer must provide Standard Operating Procedures (SOP's)

For the professional discussion, you (the apprentice) will be required to prepare and submit a portfolio of evidence. The portfolio of evidence itself is not assessed; it is used to inform the questioning during the professional discussion (see requirements below)

Portfolio of evidence requirements:

- It must contain evidence of competence for the KSBs mapped to the professional discussion
- Each piece of evidence may map to more than one KSB
- It will typically contain 10 pieces of evidence
- The employer must sign off the portfolio of evidence, thereby authenticating the work it contains
- You (the Apprentice) must compile a portfolio of evidence during the on-programme period of the apprenticeship
- Employers/training providers are free to devise their own version of the portfolio of evidence, but the portfolio of evidence, but the portfolio of evidence would typically contain the following information:
 - the name of the apprentice
 - details of the apprentice's workplace

- evidence can be provided through a range of sources; for example:
 - performance review documentation
 - witness statements
 - training/records/certificates
 - work products such as risk assessments, reports meeting records, plans etc.
- evidence cannot include self-assessment narrative
- feedback from line managers, customers, stakeholder etc can be provided; any employer contributions should focus on direct observation of evidence (for example witness statements) of competence rather than opinions

Independent assessment panel members must ensure that the Gateway Checklist document (**Appendix 1**) has been completed to confirm the above requirements have been met.

At this point you may wish to submit evidence of your on-programme learning to support the KSB's to the EPAO. This can be used to support the professional discussion points within the Assessment Method 2: Professional Discussion supported by portfolio of evidence. The evidence you wish to submit must be reference against the relevant KSB's within the standard.

This can be recorded using the on-programme learning mapping document provided (**Appendix 2**)

Assessment Methods

The end-point assessment consists of two discrete assessment methods:

1. Practical Observation with questioning
2. Professional Review/Discussion

Assessment Method 1: Practical Observation with Questioning

Overview

Apprentices must be observed by an independent assessor completing the work tasks in your normal workplace, in which you will demonstrate the KSB's assigned to this assessment method.

The rationale for this assessment is:

- this is a practical role, best demonstrated through observation
- observation allows for the assessment of work tasks in a normal place of work, using processes and equipment with which the apprentice is familiar, which is likely to enable the apprentice to perform at their best
- observation is a cost effective assessment method as it makes use of the employer's premises and resources
- the tasks chosen to reflect something that would be completed by an Engineering Manufacturing Technician on a regular basis
- the questioning component enables the checking of underpinning knowledge, skills and behaviours

Delivery

The observation and questioning must assess the apprentice against the KSB's assigned to the assessment method. The EPAO must arrange for the observation to take place in consultation with the apprentice's employer. An independent assessor may observe up to a maximum of **one** apprentice at any one time to allow for quality and rigour. Questioning must take place on a **one-to-one basis**.

The observation and questioning must take **three** hours. The observation and questioning may be split into discrete sections held over a maximum of one working day. The length of a working day is typically considered to be 7.5 hrs. there may be breaks during the observation with questioning to allow the apprentice to move from location to another as required and to take meal/comfort breaks. The independent assessor has the discretion to increase the time of the observation and questioning by up to 10% to allow the apprentice to complete a task or answer a question at the end of the assessment period.

Immediately in advance of the observation and questioning, apprentices must be provided with verbal and written information on the format of the assessment, including timescales. This briefing time is exclusive of the assessment period.

The following activities **MUST** be observed during the observation:

- complying with Health and Safety requirement in their immediate working environment
- demonstrating work task(s) being received, agreed and relevant information being extracted in order to complete the required activity
- carrying out the required task(s) in line with organisation's standard operating procedures (SOPs)
- Completing, saving and storing task(s) outcomes in the appropriate format and location, for example using a PDF format on the organisation's secured computer system.

Note: Typically the observation will be covered within **one** task but can be covered in **two** tasks if required to allow the coverage of the KSB's. Examples could include raising quality notifications (QN's) producing process changes, drawing modifications, carrying out quality investigations

Observations should take place in an accessible area that does not require special clearance. The independent assessor must be unobstructive and must not interrupt the candidate whilst conducting the observation. Apprentices are expected to understand and use relevant occupational language that would be typical of an apprentice working at this level.

Questions must be asked once the observation is complete, the maximum time allowed for questioning is **30 minutes**. All questioning **must** be completed within the **three** hours total time period allowed for the observation with questioning.

There are a minimum of **six** open questions that the independent assessor will ask in an environment which is quiet, free from distraction and influence, follow up questions may be asked to seek clarification when required. The purpose of the questions is to assess the apprentice(s) underpinning knowledge, skills and behaviours. EPAOs must provide independent assessors with sample questions; however they can be adapted based on what they have been observed.

KSB's observed and answers to questions must be documented by the independent assessor using their EPAO's documentation and procedures, all grading decisions are to be made by the independent assessor.

Venue

The observation can take place in:

- Employers premises
- Workplace other than the employers own premises, e.g. premises of a client

Support material

EPAO's will produce the following material to support this assessment method:

- observation specifications
- sample question bank
- assessment recording documentation
- guidance for apprentices and employers

Question development

The EPAO must produce a bank of sample questions to help the independent assessor but these are for illustration only and the independent assessor may use their professional judgement to adapt their questions in-line with the assessors training and the EPAO's standardisation process.

The question bank must be of sufficient size to prevent predictability and the EPAO must review it regularly (at least once a year) to ensure that its contents are fit for purpose. The questions relating to the underpinning KSB's must be varied yet allow assessment of the relevant KSBs.

Assessment Method 2: Professional Discussion supported by portfolio of evidence

Overview

This assessment will take the form of a professional discussion which must be appropriately structured to draw out the best of the apprentices competence and excellence and cover the KSB's assigned to this assessment method.

The rationale for this assessment method is:

- it allows a wider breadth of knowledge and understanding than can be covered in a single observation
- it allows KSB's which may not naturally occur in every workplace or may take too long to observe to be assessed

The supporting portfolio of evidence allow the apprentice to refer to real work examples and does not rely on memory. **The portfolio of evidence is not assessed.**

Delivery

The independent assessor must conduct and assess the professional discussion on a one-to-one basis, it will involve questions that will focus on coverage of prior learning or activity. The professional discussion **must** last for **60 minutes**, the independent assessor has the discretion to increase the time of the professional discussion the time of the professional discussion by up to **10%** to allow the apprentice to complete the last answer. The Independent assessor must ask a minimum of **ten** open competence-based questions, additional follow up questions are allowed to seek further clarification. The apprentice can refer to and illustrate their answers with evidence from their portfolio of evidence, however the portfolio is not directly assessed.

The EPAO must produce a bank of sample questions to help the independent assessor but these are for illustration only and the independent assessor may use their professional judgement to adapt their questions following a review of their portfolio of evidence, in-line with the assessor's training and the EPAO's standardisation process. The apprentice would be expected to understand and use relevant occupational language that would be typical of an apprentice working at this level of this occupation.

The professional discussion must cover the following themes in line with specified knowledge, Skills and Behaviours (KSB's)

- Problem Solving & Communication (K1, K2, K3, S3 and S7)
- Project/Time Management & Quality Standards (K12, K20, K23 and S2)
- Manufacturing Principles, Methods & Applications (K6, K9, K18 and K19)
- Commercial Considerations (K4, K17, K21 and S9)
- Behavioural Expectations (B1, B3, B4, B5, B6 and K13)

The independent assessor must use the assessment tools and procedures that are set by the EPAO to record the professional discussion, the independent assessor will make all grading discussions.

Venue

The professional discussion should take place in a quiet room, free from distractions and influence, video conferencing can be used to conduct the professional discussion. The EPAO must have the necessary processes place to verify the identity of the apprentice, ensuring that they are not being aided in any way.

Support material

The professional discussion can take place in any of the following:

- employers premises
- a suitable venue selected by the EPAO for example a training providers premises

Question development

It is recommended that sample questions are developed in consultation with employers of this occupation. EPAO's must maintain the security and confidentiality of their specifications when consulting with employers. The 'question bank' must be of sufficient size to prevent predictability and the EPAO must review regularly (at least once a year) to ensure it and its content are fit for purpose. The questions relating to the underpinning KSB's must be varied yet allow assessment of the relevant KSB's.

Reasonable adjustments

The EPAO must have in place clear and fair arrangements for making reasonable adjustments for this apprenticeship standard. This should include how the apprentice qualifies for reasonable adjustment and what reasonable adjustments will be made. The adjustments must maintain the validity, reliability and integrity of the assessment methods outlined in this assessment plan.

Weighting of assessment methods

All assessment methods are weighted equally in their contribution to the overall EPA grade.

Grading

Assessment Method 1: Practical Observation with Questioning

Assessment Area/KSB's	Pass Apprentice (You) must demonstrate all the following:
Health and Safety (K11)	Complies with statutory and organisational health and safety regulations and policies and follows procedures including risk assessments
Work tasks received, agreed and relevant information extracted (K5, K7, K14, K15, K16, S1, S4)	Adheres to the organisations quality management system, outlines its purpose, internal governance arrangements to ensure compliance and identifies where the documentation is located. Prioritises what task related documentation is received, understands where it has come from and how work plans are confirmed. Reads, extracts and analysis relevant engineering and manufacturing related data and information in order to draw accurate conclusions and make informed decisions on the task(s) to be completed, completing any necessary documentation as required.
Carrying out of required task(s) (K8, K10, K22, S6, S10, B2)	Identifies how departmental and/or cross function teams work collaboratively to meet organisational targets and objectives, how any conflicts would be managed in line with relevant policies and procedures. Uses and follows the organisation's approved Standard Operating Procedures(SOP's) and documentation recording systems and explains the potential implications to quality and delivery if they are not adhered to. Uses relevant computer based software/packages and explains the application and any limitations for each. Uses the approved process and quality compliance procedure to create or amend engineering and/or manufacturing documentation in a systematic, proactive and transparent way. Examples include creation/amendments to drawings, bill of materials and quality reports.
Document control and communication (S5, S8, B7)	Communicates effectively to stakeholders relating to the completion of the task being observed. Examples include electronic (email, video conferencing, and messaging platforms, verbal and presentation) Applies documentation control processes and procedures in line with organisational requirements Acts professionally with a positive respectful attitude. Examples include how they communicate with colleagues such a s by using the correct technical language either by email or face to face, their approach when dealing with problems and their understanding of escalation process within their organisation.
Fail: Apprentices (You) will fail if you do not meet all the pass criteria	

The final observation with questioning, this is graded fail or pass with the **outcome** contributing to the overall grade.

After completion of the activity, the independent assessor (technical expert) must submit all relevant documents covering the practical observation to include the questioning component and professional discussion to EAL as the EPAO, within 10 working days.

The full details of the Practical observation and professional discussion requirements can be found in the end-point assessment plan for this standard here: <https://www.instituteforapprenticeships.org/apprenticeship-standards/engineering-manufacturing-technician-v1-0>

Assessment Method 2: Professional Discussion supporting by portfolio of evidence

Assessment Area/KSB's	Pass Apprentice must demonstrate all the following:	Distinction Apprentice must demonstrate all the Pass criteria and fully achieve at least 8 from the 11 Distinction criteria (each statement is a separate grading descriptor and there may be more than one statement contained in the separate boxes in the table below)
<p>Problem Solving and Communication (K1, K2, K3, S3, S7)</p>	<p>Explains when they have used effective communication techniques, including listening, questioning and support of others. Identifies when they have used team integration techniques, including conflict resolution and managing difficult conversations (team working). Demonstrates how they have supported problem solving activities utilising tools, such as: Root Cause Analysis (RCA) Process Failure Modes Effects Analysis (PFMEA), Fishbone, Practical Problem Solving (PPS) and Advanced Product Quality Planning (APQP). Demonstrates how they have used lean tools and techniques, such as: Six Sigma, 8 Wastes, 5S's, Kaizen and Poka-Yoke (Error proofing) and explain the benefits of using them.</p>	<ol style="list-style-type: none"> 1. Critically evaluates why the specific continuous improvement tools and techniques were used, describes the limitations of those tools and justifies this by the impact achieved. 2. Critically evaluates the effective team integration techniques used, outlines the limitations of those tools and justifies the positive impact on the team.
<p>Project Management and Quality Standards (K12, K20, K23, S2)</p>	<p>Demonstrates how they have used project management techniques, such as Strengths, Weaknesses, Opportunities, Threats (SWOT), stakeholder matrices, risk mapping, radar chart and summary risk profiles. Demonstrated how they have utilised management tools/techniques to ensure that personal team and organisational objectives are achieved (such as Gantt charts, task, management software/applications, project management software/applications). Explains how they have used an array of methods, tools to check quality in manufacturing and engineering including measurements (such as: dimensions, weight, signal, temperature, time) and testing (such as: non-destructive and destructive). Demonstrates when they have taken into account the impact of sustainability and environmental efficiency, outlining how such factors have influenced their decisions.</p>	<ol style="list-style-type: none"> 3. Outlines the different quality processes and project management techniques that could be justifiably used for the relevant manufacturing activities including their relevant strengths and weaknesses. 4. Critically evaluates the quality processes used with a justified impact on the business strategy or project, outlining the limitations and suggesting 5. Critically evaluates the project management techniques currently used with a justified impact on the business strategy or project and outlines the limitations of the management techniques
<p>Manufacturing Principles, Methods and Applications</p>	<p>Explains when they have used a range of manufacturing applications (such as: machining, joining, forming, assembling, shaping, processing, printing, moulding,</p>	<ol style="list-style-type: none"> 6. Critically compares the different manufacturing applications and materials used to determine the most cost effective or efficient process.

<p>(K6, K9, K18, K19)</p>	<p>extruding and casting) on common metallic and non-metallic material types. Explains when they have used different production methods and their applications (such as: single, batch, flow and mass). Explains how they have applied core engineering principles (such as: mathematical, science, mechanical, electric/electronic applications) to an activity.</p>	<p>7. Differentiates the different production methods used, outlines their limitations and justifies the reason of choice. 8. Applies complex engineering principles such as mathematical, science, mechanical, electric or electronic applications. Examples include calculus, statistics and probability, needs analysis, systems engineering.</p>
<p>Commercial Considerations (K4, K17, K21, S9)</p>	<p>Explains how Industry 4.0 could impact organisations, including the integration of automation, digital systems and manufacturing engineering systems. Explains how their business manages and monitors internal and or supplier performance to ensure that cost, quality, delivery and sustainability objectives are being delivered and their responsibility towards that. Explains how their department applies financial planning, recording and review processes, such as departmental budgets, estimating, cost control, cost forecasting, and investment appraisal and how they contribute.</p>	<p>9. Critically evaluates how Industry 4.0 will impact the business, innovation, people and company culture with the integration of digital, automation, manufacturing and engineering systems to promote and maximise continuous improvements within an organisation. 10. Evaluates how organisations react to internal and external processes which can influence business objectives such as: cost, delivery, quality and sustainability. Examples include:-changes in customer demand, quality escapes, supplier shortages, regulation changes.</p>
<p>Behavioural Expectations (B1, B3, B4, B5, B6, K13)</p>	<p>Demonstrates how they assume responsibility for the importance of adherence to the organisations Environmental, Health and Safety management systems - actively displays and promotes a safety first culture within the organisation and the impact of that.</p> <p>Demonstrates how they actively promote innovation for emerging and advanced engineering and manufacturing technologies to optimise performance.</p> <p>Demonstrates how they assume full responsibility for their own professional development, seeking opportunities to enhance knowledge, skills and experience.</p> <p>Demonstrates how they keep abreast of developments in engineering processes manufacturing and emerging technologies.</p> <p>Demonstrates how they create and maintain positive, professional, trusting and ethical working relationships with their team and the wider range of internal, external and connected stakeholders.</p>	<p>11. Demonstrates how they have offered advice and guidance to others to overcome problems, implement improvements or assist them with their personal development</p>

	<p>Demonstrates when they have accepted responsibility for their workload with a responsible approach to risk, demonstrating a high level of motivation and resilience when facing a challenge.</p> <p>Explains how human factors (organisational, environment and job factors) can influence and impact individual characteristics, performance and behaviours in the workplace.</p>	
Fail: apprentices (You) will fail if you do not meet all the pass criteria.		

The final professional discussion supporting by portfolio of evidence is graded fail, pass or distinction with the **outcome** contributing to the overall grade.

After completion of the activity, the independent assessor (technical expert) must submit all relevant documents covering the practical observation to include the questioning component and professional discussion to EAL as the EPAO, within 10 working days.

The full details of the Practical observation and professional discussion requirements can be found in the end-point assessment plan for this standard here: <https://www.instituteforapprenticeships.org/apprenticeship-standards/engineering-manufacturing-technician-v1-0>

Overall EPA grading

Performance in the EPA will determine the apprenticeship grade of fail, pass or distinction. Independent assessors must individually grade each assessment method, according to the requirements set out in this plan. EPAOs must combine the individual assessment method grades to determine the overall EPA grade.

Apprentices who fail **one** or **more** assessment method will be awarded an EPA ‘fail.’ In order to achieve an overall ‘pass’ apprentices must achieve a pass in both assessment methods. In order to achieve an overall ‘distinction’ apprentices must achieve a distinction in the professional discussion and a ‘pass’ in the observation with questioning.

There are restrictions on grading where apprentices re-sit/re-take an assessment method – see the re-sit/re-take section. Grades from individual assessment methods should be combined in the following way to determine the grade of the EPA as a whole:

Assessment Method 1: observation with questioning	Assessment Method 2: professional discussion supported by portfolio of evidence	Overall Grading
Fail	Any grade	Fail
Any grade	Fail	Fail
Pass	Pass	Pass
Pass	Distinction	Distinction

Re-sits and Re-takes

Apprentices who fail one or more assessment method will be offered the opportunity to take a re-sit or a re-take. A re-sit does not require further learning, whereas a re-take does.

Apprentices should have a supportive action plan to prepare for the re-sit or a re-take. The apprentice's employer will need to agree that either a re-sit or re-take is an appropriate course of action.

An apprentice who fails an assessment method and therefore the EPA in the first instance will be required to re-sit or re-take any assessment methods only.

The timescales for a re-sit/re-take is agreed between the employer and EPAO. A re-sit is typically taken within the 3 three months of the EPA outcome notification. The timescales for a re-take is dependent on how much assessment methods, this must be taken within a 6 month period, otherwise the entire EPA will need to be resat/retaken. (Exceptions could be made due to circumstances deemed by the EPAO as being beyond the control of the apprentice or their employer).

Re-sits and re-takes are not offered to apprentices wishing to move from pass to distinction.

Where any assessment method has to be re-sat or re-taken the apprentice will be awarded a maximum EPA grade of pass, unless the EPAO determines there are exceptional circumstances requiring a re-sit or re-take.

Roles and Responsibilities

There are five main roles involved in the end-point assessment process: the **apprentice**, the **employer**, the **employer technical expert**, EAL as the **EPAO** and the **independent assessor**. A table listing their main responsibilities can be found in the end-point assessment plan for this standard here: <https://www.instituteforapprenticeships.org/apprenticeship-standards/engineering-manufacturing-technician-v1-0>

Internal Quality Assurance (IQA)

Internal quality assurance refers to the requirements that EAL as the EPA organisation must have in place to ensure consistent (reliable) and accurate (valid) assessment decisions.

EAL for this EPA must:

- appoint independent assessors who have recent relevant experience of the occupation/sector gained in the last two years or significant experience of the occupation sector. This should be at least the same level as the apprenticeship standard.
- appoint independent assessors who are competent to deliver the end-point assessment and these assessors will hold or be working towards an independent assessor qualification e.g. TAQA (Training and Quality Assessment)
- provide training for independent assessors in terms of good assessment practice, operating the assessment tools and grading
- have a robust quality systems and procedures that support fair, reliable and consistent assessment across the organisation and over time
- operate induction training and standardisation events for independent assessors when they begin working for the EPAO on this standard and before they deliver an updated assessment method for the first time
- ensure independent assessors attend standardisation events on an ongoing basis and at least once a year

External Quality Assurance (EQA)

EQA arrangements will ensure that EAL, as the EPAOs delivering EPA for this apprenticeship, operates consistently and in line with the end-point assessment plan for this standard.

EQA for this apprenticeship standard will be undertaken by the Institute for Apprenticeships (IoA).

Affordability

Affordability of the EPA will be aided by using at least some of the following practices:

- use of employers premises and resources for the observation and questioning
- using an employer's premise for the professional discussion
- remote assessment for the professional discussion is permissible, reducing travel costs, e.g. video conferencing
- completing the observation and questioning and professional discussion on the same day

Professional body recognition

This apprenticeship is designed to prepare successful apprentices to meet the requirements for registration as Engineering Technician (EngTech) with:

- Institute of Engineering and Technology (IET)
- Institute of Mechanical Science (IMechE)
- Royal Aeronautical Society

Mapping of Knowledge, Skills and Behaviours

A table, which provides full mapping of the KSBs, can be found in Annex A of the end-point assessment plan for this standard here: <https://www.instituteforapprenticeships.org/apprenticeship-standards/engineering-manufacturing-technician-v1-0>



Appendix 1: End-point Assessment Gateway Checklist

The EPA must only start once the employer is satisfied that you are consistently working at or above the level set out in the occupational standard; that means you have achieved occupational competence. In making this decision, the employer may take advice from your training provider(s) but the decision must ultimately be made solely by the employer.

In addition to the employer's confirmation that you are working at or above the level in the occupational standard, the following gateway requirements must be met prior to you starting the EPA:

The apprentice has:	EPAO confirmation (✓)
For level 3 apprentices and above apprentices without English and Mathematics at Level 2 must achieve level 2 prior to taking your EPA	<input type="checkbox"/>
All apprentices (from the Aerospace and Non-Aerospace sectors) must achieve the following approved qualifications as mandated in the occupational standard: Level 4 Higher National Certificate in Engineering or Level 4 Higher National Certificate in Manufacturing Operations	<input type="checkbox"/>
For the Aerospace sector only , apprentices must also achieve the following qualifications mandated in the occupational standard: EAL Level 2 Diploma in the Aerospace and Aviation Engineering (Foundation Competence) EAL Level 4 Diploma in Engineering and Advanced Manufacturing (Development Competence)	<input type="checkbox"/>
For the observation with questioning: the employer must provide Standard Operating Procedures (SOP's)	<input type="checkbox"/>
Portfolio of evidence of occupational competence prepared by Apprentice during training period, checked by Independent Assessor, signed off	<input type="checkbox"/>
The portfolio has been submitted for assessment a minimum of 10 days before the EPA	<input type="checkbox"/>
The portfolio has been cross referenced against all of the KSB's	<input type="checkbox"/>

Achieved English and Mathematics level 2 as a minimum. For those with an education, health and care plan or legacy statement, the apprenticeship's English and Mathematics minimum requirements is Entry level 3 and British Sign Language qualification are an alternative to English qualifications for whom this is their primary language.



**Level 4 Engineering Manufacturing Technician Apprenticeship - Standard Reference
Number: ST0841**

Assessment Method 2: Professional Discussion underpinned by portfolio of evidence

Apprentice's Name: Click or tap here to enter text.

Apprentice's Company: Click or tap here to enter text.

Date of End Point Assessment: Click or tap to enter a date.

***Note: The On-programme learning mapping document will be submitted to
EAL as supporting evidence to support Method 2: Professional Discussion
underpinned by portfolio of evidence as part of their EPA Gateway application.**

Appendix 2: Assessment Method: Professional Review

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
K1	<p>Problem solving tools/techniques Such as practical problem solving (PPS), root cause analysis (RCA) and process failure mode effects analysis (PFMEA)</p>	<p>Explains when they have used effective communication techniques, including listening, questioning and support of others. Identifies when they have used team integration techniques, including conflict resolution and managing difficult conversations (team working).</p> <p>Demonstrates how they have supported problem solving activities utilising tools, such as: Root Cause Analysis (RCA) Process Failure Modes Effects Analysis (PFMEA), Fishbone, Practical Problem Solving (PPS) and Advanced Product Quality Planning (APQP).</p> <p>Demonstrates how they have used lean tools and techniques, such as: Six Sigma, 8 Wastes, 5S's, Kaizen and Poka-Yoke (Error proofing) and explain the benefits of using them.</p>	<p>1. Critically evaluates why the specific continuous improvement tools and techniques were used, describes the limitations of those tools and justifies this by the impact achieved.</p> <p>2. Critically evaluates the effective team integration techniques used, outlines the limitations of those tools and justifies the positive impact on the team.</p>
		Apprentice's justification of why they think they have met Pass and Distinction criteria	
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
K2	<p>Effective communication techniques including listening, questioning and support of others</p>	<p>Explains when they have used effective communication techniques, including listening, questioning and support of others. Identifies when they have used team integration techniques, including conflict resolution and managing difficult conversations (team working).</p> <p>Demonstrates how they have supported problem solving activities utilising tools, such as: Root Cause Analysis (RCA) Process Failure Modes Effects Analysis (PFMEA), Fishbone, Practical Problem Solving (PPS) and Advanced Product Quality Planning (APQP).</p> <p>Demonstrates how they have used lean tools and techniques, such as: Six Sigma, 8 Wastes, 5S's, Kaizen and Poka-Yoke (Error proofing) and explain the benefits of using them.</p>	<p>1. Critically evaluates why the specific continuous improvement tools and techniques were used, describes the limitations of those tools and justifies this by the impact achieved.</p> <p>2. Critically evaluates the effective team integration techniques used, outlines the limitations of those tools and justifies the positive impact on the team.</p>
		Apprentice's justification of why they think they have met Pass and Distinction criteria	
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
K3	Use, benefits and applications of lean methods and tools used in manufacturing and engineering such as: Kaizen, Six Sigma and 8 wastes)	Explains when they have used effective communication techniques, including listening, questioning and support of others. Identifies when they have used team integration techniques, including conflict resolution and managing difficult conversations (team working).	1. Critically evaluates why the specific continuous improvement tools and techniques were used, describes the limitations of those tools and justifies this by the impact achieved. 2. Critically evaluates the effective team integration techniques used, outlines the limitations of those tools and justifies the positive impact on the team.
		Demonstrates how they have supported problem solving activities utilising tools, such as: Root Cause Analysis (RCA) Process Failure Modes Effects Analysis (PFMEA), Fishbone, Practical Problem Solving (PPS) and Advanced Product Quality Planning (APQP).	
		Demonstrates how they have used lean tools and techniques, such as: Six Sigma, 8 Wastes, 5S's, Kaizen and Poka-Yoke (Error proofing) and explain the benefits of using them.	
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
K4	How Industry 4.0 will impact organisations including the integration of automation, digital systems and manufacturing engineering systems	Explains how Industry 4.0 could impact organisations, including the integration of automation, digital systems and manufacturing engineering systems.	9. Critically evaluates how Industry 4.0 will impact the business, innovation, people and company culture with the integration of digital, automation, manufacturing and engineering systems to promote and maximise continuous improvements within an organisation. 10. Evaluates how organisations react to internal and external processes which can influence business objectives such as: cost, delivery, quality and sustainability. Examples include:-changes in customer demand, quality escapes, supplier shortages, regulation changes.
		Explains how their business manages and monitors internal and or supplier performance to ensure that cost, quality, delivery and sustainability objectives are being delivered and their responsibility towards that.	
		Explains how their department applies financial planning, recording and review processes, such as departmental budgets, estimating, cost control, cost forecasting, and investment appraisal and how they contribute.	
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
K6	Different manufacturing methods use, their applications such as (machining, joining, forming, assembling, shaping, processing, printing, moulding, extruding and casting)	Explains when they have used a range of manufacturing applications (such as: machining, joining, forming, assembling, shaping, processing, printing, moulding, extruding and casting) on common metallic and non-metallic material types.	<p>6. Critically compares the different manufacturing applications and materials used to determine the most cost effective or efficient process.</p> <p>7. Differentiates the different production methods used, outlines their limitations and justifies the reason of choice.</p> <p>8. Applies complex engineering principles such as mathematical, science, mechanical, electric or electronic applications. Examples include calculus, statistics and probability, needs analysis, systems engineering.</p>
		Explains when they have used different production methods and their applications (such as: single, batch, flow and mass).	
		Explains how they have applied core engineering principles (such as: mathematical, science, mechanical, electric/electronic applications) to an activity.	
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
K9	Core engineering principles such as mathematics, science, mechanical and electrical/electronic applications relevant to manufacturing and engineering activity undertaken	Explains when they have used a range of manufacturing applications (such as: machining, joining, forming, assembling, shaping, processing, printing, moulding, extruding and casting) on common metallic and non-metallic material types.	<p>6. Critically compares the different manufacturing applications and materials used to determine the most cost effective or efficient process.</p> <p>7. Differentiates the different production methods used, outlines their limitations and justifies the reason of choice.</p> <p>8. Applies complex engineering principles such as mathematical, science, mechanical, electric or electronic applications. Examples include calculus, statistics and probability, needs analysis, systems engineering.</p>
		Explains when they have used different production methods and their applications (such as: single, batch, flow and mass).	
		Explains how they have applied core engineering principles (such as: mathematical, science, mechanical, electric/electronic applications) to an activity.	
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
K12	Project management techniques such as strengths, Weaknesses, Opportunities, Threats (SWOT), stakeholder matrices, risk mapping, radar chart and summary risk profiles	<p>Demonstrates how they have used project management techniques, such as Strengths, Weaknesses, Opportunities, Threats (SWOT), stakeholder matrices, risk mapping, radar chart and summary risk profiles. Demonstrated how they have utilised management tools/techniques to ensure that personal team and organisational objectives are achieved (such as Gantt charts, task, management software/applications, project management software/applications).</p> <p>Explains how they have used an array of methods, tools to check quality in manufacturing and engineering including measurements (such as: dimensions, weight, signal, temperature, time) and testing (such as: non-destructive and destructive).</p> <p>Demonstrates when they have taken into account the impact of sustainability and environmental efficiency, outlining how such factors have influenced their decisions.</p>	<p>3. Outlines the different quality processes and project management techniques that could be justifiably used for the relevant manufacturing activities including their relevant strengths and weaknesses.</p> <p>4. Critically evaluates the quality processes used with a justified impact on the business strategy or project, outlining the limitations and suggesting</p> <p>5. Critically evaluates the project management techniques currently used with a justified impact on the business strategy or project and outlines the limitations of the management techniques</p>
		<p>Apprentice's justification of why they think they have met Pass and Distinction criteria</p>	<p>Evidence Reference Number:</p>
		<p>Enter criteria here</p>	<p>Enter reference here</p>

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
K13	How human factors (organisational environment and job factors) can influence and impact individual characteristics, performance and behaviours in the workplace	<p>Demonstrates how they assume responsibility for the importance of adherence to the organisations Environmental, Health and Safety management systems actively displays and promotes a safety first culture within the organisation and the impact of that.</p> <p>Demonstrates how they actively promote innovation for emerging and advanced engineering and manufacturing technologies to optimise performance.</p> <p>Demonstrates how they assume full responsibility for their own professional development, seeking opportunities to enhance knowledge, skills and experience.</p> <p>Demonstrates how they keep abreast of developments in engineering processes manufacturing and emerging technologies.</p> <p>Demonstrates how they create and maintain positive, professional, trusting and ethical working relationships with their team and the wider range of internal, external and connected stakeholders.</p> <p>Demonstrates when they have accepted responsibility for their workload with a responsible approach to risk, demonstrating a high level of motivation and resilience when facing a challenge.</p> <p>Explains how human factors (organisational, environment and job factors) can influence and impact individual characteristics, performance and behaviours in the workplace.</p>	11. Demonstrates how they have offered advice and guidance to others to overcome problems, implement improvements or assist them with their personal development
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
K17	How organisations manage and monitor internal and or supplier performance to ensure that cost, quality, delivery and sustainability objectives are being delivered	<p>Explains how Industry 4.0 could impact organisations, including the integration of automation, digital systems and manufacturing engineering systems.</p> <p>Explains how their business manages and monitors internal and or supplier performance to ensure that cost, quality, delivery and sustainability objectives are being delivered and their responsibility towards that.</p> <p>Explains how their department applies financial planning, recording and review processes, such as departmental budgets, estimating, cost control, cost forecasting, and investment appraisal and how they contribute.</p>	<p>9. Critically evaluates how Industry 4.0 will impact the business, innovation, people and company culture with the integration of digital, automation, manufacturing and engineering systems to promote and maximise continuous improvements within an organisation.</p> <p>10. Evaluates how organisations react to internal and external processes which can influence business objectives such as: cost, delivery, quality and sustainability. Examples include:-changes in customer demand, quality escapes, supplier shortages, regulation changes.</p>
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
K18	Use and applications of common metallic and non-metallic materials used in manufacturing and engineering	Explains when they have used a range of manufacturing applications (such as: machining, joining, forming, assembling, shaping, processing, printing, moulding, extruding and casting) on common metallic and non-metallic material types.	<p>6. Critically compares the different manufacturing applications and materials used to determine the most cost effective or efficient process.</p> <p>7. Differentiates the different production methods used, outlines their limitations and justifies the reason of choice.</p> <p>8. Applies complex engineering principles such as mathematical, science, mechanical, electric or electronic applications. Examples include calculus, statistics and probability, needs analysis, systems engineering.</p>
		Explains when they have used different production methods and their applications (such as: single, batch, flow and mass).	
		Explains how they have applied core engineering principles (such as: mathematical, science, mechanical, electric/electronic applications) to an activity.	
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
K19	Different production methods used and their applications such as single, batch, flow and mass	Explains when they have used a range of manufacturing applications (such as: machining, joining, forming, assembling, shaping, processing, printing, moulding, extruding and casting) on common metallic and non-metallic material types.	<p>6. Critically compares the different manufacturing applications and materials used to determine the most cost effective or efficient process.</p> <p>7. Differentiates the different production methods used, outlines their limitations and justifies the reason of choice.</p> <p>8. Applies complex engineering principles such as mathematical, science, mechanical, electric or electronic applications. Examples include calculus, statistics and probability, needs analysis, systems engineering.</p>
		Explains when they have used different production methods and their applications (such as: single, batch, flow and mass).	
		Explains how they have applied core engineering principles (such as: mathematical, science, mechanical, electric/electronic applications) to an activity.	
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
K20	Different methods tools and frequency used to check quality in manufacturing and engineering including measurements such as (dimensions, weight, signal, temperature, time) and testing (such as non-destructive and destructive)	Demonstrates how they have used project management techniques, such as Strengths, Weaknesses, Opportunities, Threats (SWOT), stakeholder matrices, risk mapping, radar chart and summary risk profiles.	<p>3. Outlines the different quality processes and project management techniques that could be justifiably used for the relevant manufacturing activities including their relevant strengths and weaknesses.</p> <p>4. Critically evaluates the quality processes used with a justified impact on the business strategy or project, outlining the limitations and suggesting</p> <p>5. Critically evaluates the project management techniques currently used with a justified impact on the business strategy or project and outlines the limitations of the management techniques</p>
		Demonstrated how they have utilised management tools/techniques to ensure that personal team and organisational objectives are achieved (such as Gantt charts, task, management software/applications, project management software/applications).	
		Explains how they have used an array of methods, tools to check quality in manufacturing and engineering including measurements (such as: dimensions, weight, signal, temperature, time) and testing (such as: non-destructive and destructive).	
		Demonstrates when they have taken into account the impact of sustainability and environmental efficiency, outlining how such factors have influenced their decisions	Evidence Reference Number:
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Enter reference here
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
K21	Departmental process used to create, record and review financial data and information	Explains how Industry 4.0 could impact organisations, including the integration of automation, digital systems and manufacturing engineering systems.	<p>9. Critically evaluates how Industry 4.0 will impact the business, innovation, people and company culture with the integration of digital, automation, manufacturing and engineering systems to promote and maximise continuous improvements within an organisation.</p> <p>10. Evaluates how organisations react to internal and external processes which can influence business objectives such as: cost, delivery, quality and sustainability. Examples include:-changes in customer demand, quality escapes, supplier shortages, regulation changes.</p>
		Explains how their business manages and monitors internal and or supplier performance to ensure that cost, quality, delivery and sustainability objectives are being delivered and their responsibility towards that.	
		Explains how their department applies financial planning, recording and review processes, such as departmental budgets, estimating, cost control, cost forecasting, and investment appraisal and how they contribute.	
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
K23	The impact of sustainability and environmental efficiency and how such matters influence manufacturing decisions	Explains how Industry 4.0 could impact organisations, including the integration of automation, digital systems and manufacturing engineering systems.	<p>3. Outlines the different quality processes and project management techniques that could be justifiably used for the relevant manufacturing activities including their relevant strengths and weaknesses.</p> <p>4. Critically evaluates the quality processes used with a justified impact on the business strategy or project, outlining the limitations and suggesting</p> <p>5. Critically evaluates the project management techniques currently used with a justified impact on the business strategy or project and outlines the limitations of the management techniques</p>
		Explains how their business manages and monitors internal and or supplier performance to ensure that cost, quality, delivery and sustainability objectives are being delivered and their responsibility towards that.	
		Explains how their department applies financial planning, recording and review processes, such as departmental budgets, estimating, cost control, cost forecasting, and investment appraisal and how they contribute.	
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
S2	Use project management tools such as Strengths, Weaknesses, opportunities, Threats (SWOT), stakeholder matrices, risk mapping, radar chart and summary risk profiles	Demonstrates how they have used project management techniques, such as Strengths, Weaknesses, Opportunities, Threats (SWOT), stakeholder matrices, risk mapping, radar chart and summary risk profiles.	<p>3. Outlines the different quality processes and project management techniques that could be justifiably used for the relevant manufacturing activities including their relevant strengths and weaknesses.</p> <p>4. Critically evaluates the quality processes used with a justified impact on the business strategy or project, outlining the limitations and suggesting</p> <p>5. Critically evaluates the project management techniques currently used with a justified impact on the business strategy or project and outlines the limitations of the management techniques</p>
		Demonstrated how they have utilised management tools/techniques to ensure that personal team and organisational objectives are achieved (such as Gantt charts, task, management software/applications, project management software/applications).	
		Explains how they have used an array of methods, tools to check quality in manufacturing and engineering including measurements (such as: dimensions, weight, signal, temperature, time) and testing (such as: non-destructive and destructive).	
		Demonstrates when they have taken into account the impact of sustainability and environmental efficiency, outlining how such factors have influenced their decisions	
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
S3	Use problem solving tools/techniques Such as root cause analysis (RCA) and process failure mode effects analysis (PFMEA), fishbone, Practical Problem Solving (PPS) and advanced product quality planning (APQP)	Explains when they have used effective communication techniques, including listening, questioning and support of others. Identifies when they have used team integration techniques, including conflict resolution and managing difficult conversations (team working).	1. Critically evaluates why the specific continuous improvement tools and techniques were used, describes the limitations of those tools and justifies this by the impact achieved. 2. Critically evaluates the effective team integration techniques used, outlines the limitations of those tools and justifies the positive impact on the team.
		Demonstrates how they have supported problem solving activities utilising tools, such as: Root Cause Analysis (RCA) Process Failure Modes Effects Analysis (PFMEA), Fishbone, Practical Problem Solving (PPS) and Advanced Product Quality Planning (APQP).	
		Demonstrates how they have used lean tools and techniques, such as: Six Sigma, 8 Wastes, 5S's, Kaizen and Poka-Yoke (Error proofing) and explain the benefits of using them.	Evidence Reference Number:
		Apprentice's justification of why they think they have met Pass and Distinction criteria	
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
S7	Use lean tools and techniques such as Six Sigma, 8 Wastes, Workplace organisation such as 5S's (sort, set in order, shine, standardise, and sustain), Kaizen and Poka-Yoke (Error Proofing)	Explains when they have used effective communication techniques, including listening, questioning and support of others. Identifies when they have used team integration techniques, including conflict resolution and managing difficult conversations (team working).	1. Critically evaluates why the specific continuous improvement tools and techniques were used, describes the limitations of those tools and justifies this by the impact achieved. 2. Critically evaluates the effective team integration techniques used, outlines the limitations of those tools and justifies the positive impact on the team.
		Demonstrates how they have supported problem solving activities utilising tools, such as: Root Cause Analysis (RCA) Process Failure Modes Effects Analysis (PFMEA), Fishbone, Practical Problem Solving (PPS) and Advanced Product Quality Planning (APQP).	
		Demonstrates how they have used lean tools and techniques, such as: Six Sigma, 8 Wastes, 5S's, Kaizen and Poka-Yoke (Error proofing) and explain the benefits of using them.	Evidence Reference Number:
		Apprentice's justification of why they think they have met Pass and Distinction criteria	
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
S9	Use financial planning, recording and review processes and documentation such as departmental budgets, estimating, cost control, cost forecasting and investment appraisal	Explains how Industry 4.0 could impact organisations, including the integration of automation, digital systems and manufacturing engineering systems.	<p>9. Critically evaluates how Industry 4.0 will impact the business, innovation, people and company culture with the integration of digital, automation, manufacturing and engineering systems to promote and maximise continuous improvements within an organisation.</p> <p>10. Evaluates how organisations react to internal and external processes which can influence business objectives such as: cost, delivery, quality and sustainability. Examples include:-changes in customer demand, quality escapes, supplier shortages, regulation changes.</p>
		Explains how their business manages and monitors internal and or supplier performance to ensure that cost, quality, delivery and sustainability objectives are being delivered and their responsibility towards that.	
		Explains how their department applies financial planning, recording and review processes, such as departmental budgets, estimating, cost control, cost forecasting, and investment appraisal and how they contribute.	
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
B1	Champions the importance of adherence to the organisations Environmental, Health and Safety management systems:- actively displays and promotes a safety first culture within the organisation	<p>Demonstrates how they assume responsibility for the importance of adherence to the organisations Environmental, Health and Safety management systems - actively displays and promotes a safety first culture within the organisation and the impact of that.</p> <p>Demonstrates how they actively promote innovation for emerging and advanced engineering and manufacturing technologies to optimise performance.</p> <p>Demonstrates how they assume full responsibility for their own professional development, seeking opportunities to enhance knowledge, skills and experience.</p> <p>Demonstrates how they keep abreast of developments in engineering processes manufacturing and emerging technologies.</p> <p>Demonstrates how they create and maintain positive, professional, trusting and ethical working relationships with their team and the wider range of internal, external and connected stakeholders.</p> <p>Demonstrates when they have accepted responsibility for their workload with a responsible approach to risk, demonstrating a high level of motivation and resilience when facing a challenge.</p> <p>Explains how human factors (organisational, environment and job factors) can influence and impact individual characteristics, performance and behaviours in the workplace.</p>	11. Demonstrates how they have offered advice and guidance to others to overcome problems, implement improvements or assist them with their personal development
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
B3	Actively promotes the case for the adoption of emerging and advance engineering and manufacturing technologies to optimise performance	<p>Demonstrates how they assume responsibility for the importance of adherence to the organisations Environmental, Health and Safety management systems - actively displays and promotes a safety first culture within the organisation and the impact of that.</p> <p>Demonstrates how they actively promote innovation for emerging and advanced engineering and manufacturing technologies to optimise performance.</p> <p>Demonstrates how they assume full responsibility for their own professional development, seeking opportunities to enhance knowledge, skills and experience.</p> <p>Demonstrates how they keep abreast of developments in engineering processes manufacturing and emerging technologies.</p> <p>Demonstrates how they create and maintain positive, professional, trusting and ethical working relationships with their team and the wider range of internal, external and connected stakeholders.</p> <p>Demonstrates when they have accepted responsibility for their workload with a responsible approach to risk, demonstrating a high level of motivation and resilience when facing a challenge.</p> <p>Explains how human factors (organisational, environment and job factors) can influence and impact individual characteristics, performance and behaviours in the workplace.</p>	11. Demonstrates how they have offered advice and guidance to others to overcome problems, implement improvements or assist them with their personal development
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
B4	Takes full responsibility for own professional development, seeking opportunities to enhance knowledge, skills and experience. Keeping abreast of developments in engineering processes manufacturing and emerging technologies	<p>Demonstrates how they assume responsibility for the importance of adherence to the organisations Environmental, Health and Safety management systems - actively displays and promotes a safety first culture within the organisation and the impact of that.</p> <p>Demonstrates how they actively promote innovation for emerging and advanced engineering and manufacturing technologies to optimise performance.</p> <p>Demonstrates how they assume full responsibility for their own professional development, seeking opportunities to enhance knowledge, skills and experience.</p> <p>Demonstrates how they keep abreast of developments in engineering processes manufacturing and emerging technologies.</p> <p>Demonstrates how they create and maintain positive, professional, trusting and ethical working relationships with their team and the wider range of internal, external and connected stakeholders.</p> <p>Demonstrates when they have accepted responsibility for their workload with a responsible approach to risk, demonstrating a high level of motivation and resilience when facing a challenge.</p> <p>Explains how human factors (organisational, environment and job factors) can influence and impact individual characteristics, performance and behaviours in the workplace.</p>	11. Demonstrates how they have offered advice and guidance to others to overcome problems, implement improvements or assist them with their personal development
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
B5	<p>Complies with statutory and organisational health and safety regulations and policies at all times. Accepts responsibility for their workload with a responsible approach to risk.</p> <p>Demonstrates a high level of motivation and resilience when facing challenge</p>	<p>Demonstrates how they assume responsibility for the importance of adherence to the organisations Environmental, Health and Safety management systems - actively displays and promotes a safety first culture within the organisation and the impact of that.</p> <p>Demonstrates how they actively promote innovation for emerging and advanced engineering and manufacturing technologies to optimise performance.</p> <p>Demonstrates how they assume full responsibility for their own professional development, seeking opportunities to enhance knowledge, skills and experience.</p> <p>Demonstrates how they keep abreast of developments in engineering processes manufacturing and emerging technologies.</p> <p>Demonstrates how they create and maintain positive, professional, trusting and ethical working relationships with their team and the wider range of internal, external and connected stakeholders.</p> <p>Demonstrates when they have accepted responsibility for their workload with a responsible approach to risk, demonstrating a high level of motivation and resilience when facing a challenge.</p> <p>Explains how human factors (organisational, environment and job factors) can influence and impact individual characteristics, performance and behaviours in the workplace.</p>	<p>11. Demonstrates how they have offered advice and guidance to others to overcome problems, implement improvements or assist them with their personal development</p>
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here

Ref	Descriptors	Pass Criteria (P)	Distinction Criteria (D)
B6	Creates and maintains positive, professional, trusting and ethical working relationships with their team and the wider of internal, external and connected stakeholders	<p>Demonstrates how they assume responsibility for the importance of adherence to the organisations Environmental, Health and Safety management systems - actively displays and promotes a safety first culture within the organisation and the impact of that.</p> <p>Demonstrates how they actively promote innovation for emerging and advanced engineering and manufacturing technologies to optimise performance.</p> <p>Demonstrates how they assume full responsibility for their own professional development, seeking opportunities to enhance knowledge, skills and experience.</p> <p>Demonstrates how they keep abreast of developments in engineering processes manufacturing and emerging technologies.</p> <p>Demonstrates how they create and maintain positive, professional, trusting and ethical working relationships with their team and the wider range of internal, external and connected stakeholders.</p> <p>Demonstrates when they have accepted responsibility for their workload with a responsible approach to risk, demonstrating a high level of motivation and resilience when facing a challenge.</p> <p>Explains how human factors (organisational, environment and job factors) can influence and impact individual characteristics, performance and behaviours in the workplace.</p>	11. Demonstrates how they have offered advice and guidance to others to overcome problems, implement improvements or assist them with their personal development
		Apprentice's justification of why they think they have met Pass and Distinction criteria	Evidence Reference Number:
		Enter criteria here	Enter reference here



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