

## EPA DRAFT PREVIEW

# DRAFT END-POINT ASSESSMENT PLAN FOR <sup>ST1398/</sup> THE MACHINE LEARNING ENGINEER APPRENTICESHIP

APPRENTICESHIP REFERENCE NUMBER	LEVEL OF THIS END-POINT ASSESSMENT (EPA)	INTEGRATED
ST1398	6	No

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## Introduction and overview

This document explains the requirements for end-point assessment (EPA) for the machine learning engineer apprenticeship. End-point assessment organisations (EPAOs) must follow this when designing and delivering the EPA.

Machine Learning Engineer apprentices, their employers and training providers should read this document.

A full-time machine learning engineer apprentice typically spends 24 months on-programme. The apprentice must spend at least 12 months on-programme and complete the required amount of off-the-job training in line with the apprenticeship funding rules.

The EPA should be completed within an EPA period lasting typically 4 months.

The apprentice must complete their training and meet the gateway requirements before starting their EPA. The EPA will assess occupational competence.

An approved EPAO must conduct the EPA for this apprenticeship. Employers must work with the training provider to select an approved EPAO from the apprenticeship providers and assessment register (APAR).

This EPA has 2 assessment methods.

The grades available for each assessment method are below.

Assessment method 1 - project evaluation report, presentation and questioning :

- fail
- pass
- distinction

Assessment method 2 - professional discussion :

- fail
- pass
- distinction

The result from each assessment method is combined to decide the overall apprenticeship grade. The following grades are available for the apprenticeship:

- fail
- pass
- merit
- distinction

## **EPA summary table**

<b>On-programme - typically 24 months</b>	<p>The apprentice must:</p> <ul style="list-style-type: none"> <li>• complete training to develop the knowledge, skills and behaviours (KSBs) outlined in this apprenticeship's standard</li> <li>• complete training towards English and mathematics qualifications in line with the apprenticeship funding rules</li> <li>• compile a portfolio of evidence</li> </ul>
<b>End-point assessment gateway</b>	<p>The apprentice's employer must be content that the apprentice is occupationally competent.</p> <p>The apprentice must:</p> <ul style="list-style-type: none"> <li>• confirm they are ready to take the EPA</li> <li>• have achieved English and mathematics qualifications in line with the apprenticeship funding rules</li> </ul> <p>For the project evaluation report, presentation and questioning , the apprentice must submit a portfolio of evidence. To ensure the project allows the apprentice to meet the KSBs mapped to this assessment method to the highest available grade, the EPAO should sign-off the project's title and scope at the gateway to confirm it is suitable. A brief project summary must be submitted to the EPAO. It should be no more than 500 words. This needs to show that the project will provide the opportunity for the apprentice to cover the KSBs mapped to this assessment method. It is not assessed.</p> <p>For the professional discussion , the apprentice must submit a portfolio of evidence.</p> <p>Gateway evidence must be submitted to the EPAO, along with any organisation specific policies and procedures requested by the EPAO.</p>
<b>End-point assessment - typically 4 months</b>	<p><b>The grades available for each assessment method are below</b></p> <p>Project evaluation report, presentation and questioning :</p>

	<ul style="list-style-type: none"> <li>• fail</li> <li>• pass</li> <li>• distinction</li> </ul> <p>Professional discussion :</p> <ul style="list-style-type: none"> <li>• fail</li> <li>• pass</li> <li>• distinction</li> </ul> <p><b>Overall EPA and apprenticeship can be graded:</b></p> <ul style="list-style-type: none"> <li>• fail</li> <li>• pass</li> <li>• merit</li> <li>• distinction</li> </ul>
<b>Re-sits and re-takes</b>	<ul style="list-style-type: none"> <li>• re-take and re-sit grade cap: pass</li> <li>• re-sit timeframe: typically 3 months</li> <li>• re-take timeframe: typically 6 months</li> </ul>

## Duration of end-point assessment period

The EPA is taken in the EPA period. The EPA period starts when the EPAO confirms the gateway requirements have been met and is typically 4 months.

The EPAO should confirm the gateway requirements have been met and start the EPA as quickly as possible.

## EPA gateway

The apprentice's employer must be content that the apprentice is occupationally competent. That is, they are deemed to be working at or above the level set out in the apprenticeship standard and ready to undertake the EPA. The employer may take advice from the apprentice's training provider, but the employer must make the decision. The apprentice will then enter the gateway.

The apprentice must meet the gateway requirements before starting their EPA.

They must:

- confirm they are ready to take the EPA
- have achieved English and mathematics qualifications in line with the apprenticeship funding rules
- submit a portfolio of evidence for the project evaluation report, presentation and questioning

The apprentice must produce a project brief .

- submit a portfolio of evidence for the professional discussion

### **Portfolio of evidence requirements:**

The apprentice must compile a portfolio of evidence during the on-programme period of the apprenticeship. It should only contain evidence related to the KSBs that will be assessed by the professional discussion. It will typically contain 8 discrete pieces of evidence. Evidence must be mapped against the KSBs. Evidence may be used to demonstrate more than one KSB; a qualitative as opposed to quantitative approach is suggested.

Evidence sources may include:

- workplace documentation and records, for example:
- workplace policies and procedures
- witness statements
- annotated photographs
- video clips with a maximum total duration 10 minutes; the apprentice must be in view and identifiable

This is not a definitive list; other evidence sources can be included.

The portfolio of evidence should not include reflective accounts or any methods of self-assessment. Any employer contributions should focus on direct observation of performance, for example, witness statements, rather than opinions. The evidence provided should be valid and attributable to the apprentice; the portfolio of evidence should contain a statement from the employer and apprentice confirming this.

The EPAO should not assess the portfolio of evidence directly as it underpins the **discussion**. The independent assessor should review the portfolio of evidence to prepare questions for the **discussion**. They are not required to provide feedback after this review.

Gateway evidence must be submitted to the EPAO, along with any organisation specific policies and procedures requested by the EPAO.

## **Order of assessment methods**

The assessment methods can be delivered in any order.

The result of one assessment method does not need to be known before starting the next.

## **Project evaluation report, presentation and questioning**

### **Overview**

The project assessment method involves the apprentice completing a significant and defined piece of work that has a real business application and benefit. This process may include for example, research, analysis and the completion of tasks or activities to achieve the outcome. The assessment method will have an output at the end of the defined piece of work. The work completed for the project assessment method must meet the needs of the employer's business and be relevant to the apprentice's occupation and apprenticeship.

This assessment method has 2 components: Completion of the defined piece of work for the

- completion of the defined piece of work for the project with a project output
- presentation with questions and answers

Together, these components give the apprentice the opportunity to demonstrate the KSBs mapped to this assessment method. They are assessed by an independent assessor.

### **Rationale**

This assessment method is being used because:

A project evaluation report is the most valid method as it allows the demonstration of professional competence.

The project is based on a real life example of the apprentices' everyday work in their industry.

Therefore, ensuring that they can demonstrate the KSBs in practice.

Producing a project evaluation report and presentation reflects normal professional practice, so this assessment method is appropriate.

Apprentices are required to be concise and precise in their use of language in written and verbal communication.

The project evaluation report offers a realistic opportunity to combine project management, examples of data products and formal writing enabling the apprentice to reflect on approaches taken.

It is a holistic assessment method, allowing the apprentice to demonstrate KSBs in an integrated way.

By writing the evaluation report on the project and being questioned to understand rationale for choices made, risks and problems identified, resolutions and areas where further action could be required.

This method will enable the apprentice to showcase their professional competency. The project is completed before gateway and is not graded.

The project evaluation report is assessed and must be completed after gateway.

## **Delivery**

The apprentice must complete a project based on any of the following:

To ensure the project allows the apprentice to meet the KSBs mapped to this assessment method to the highest available grade, the EPAO must sign-off the project's title and scope at the gateway to confirm it is suitable. The EPAO must refer to the grading descriptors to ensure that projects are pitched appropriately.

The project output must be in the form of a report and presentation.

The apprentice must start the project after the gateway. The employer should ensure the apprentice has the time and resources, within the project period, to plan and complete their project.

The apprentice may work as part of a team to complete the project, which could include internal colleagues or technical experts. The apprentice must however, complete their project report and presentation unaided and they must be reflective of their own role and contribution. The apprentice and their employer must confirm this when the report and any presentation materials are submitted.

The apprentice may choose to end the assessment method early. The apprentice must be confident they have demonstrated competence against the assessment requirements for the assessment method. The independent assessor or EPAO must ensure the apprentice is fully aware of all assessment requirements. The independent assessor or EPAO cannot suggest or choose to end any assessment methods early except in the event of a health and safety, medical or safeguarding event. The EPAO is responsible for ensuring the apprentice understands the implications of ending an assessment early if they choose to do so. The independent assessor may suggest the assessment continues. The independent assessor must document the apprentice's request to end any assessment early.

## **Component 1: Project report**

The report must include at least:

- an executive summary (or abstract)
- an introduction
- the scope of the project (including key performance indicators, aims and objectives)
- a project plan
- research outcomes
- data analysis outcomes
- project outcomes
- discussion of findings



- recommendations and conclusions
- references
- appendix containing mapping of KSBs to the report.

The report must also include:

an executive summary (or abstract)

an introduction

the scope of the project (including key performance indicators, aims and objectives)

a project plan

research outcomes

data product outcomes

project outcomes

discussion of findings

recommendations and conclusions

references

appendix containing mapping of KSBs to the report.

The project report must have a word count of 5000 words. A tolerance of 10% above or below is allowed at the apprentice's discretion. Appendices, references and diagrams are not included in this total. The apprentice must produce and include a mapping in an appendix, showing how the report evidences the KSBs mapped to this assessment method.

The apprentice must complete and submit the report and any presentation materials to the EPAO by the end of week 8 of the EPA period.

## **Component 2: Presentation with questions**

The presentation with questions must be structured to give the apprentice the opportunity to demonstrate the KSBs mapped to this assessment method to the highest available grade.

The apprentice must prepare and deliver a presentation to an independent assessor. After the presentation, the independent assessor must ask the apprentice questions about their project, report and presentation.

The presentation should cover:

- an overview of the project
- the project scope (including key performance indicators)
- summary of actions undertaken by the apprentice  
project outcomes and how these were achieved

• The presentation with questions must last 50 minutes. This will typically include a presentation of 20 minutes and questioning lasting 30 minutes. The independent assessor must use the full time available for questioning. The independent assessor can increase the time of the presentation and questioning by up to 10%. This time is to allow the apprentice to complete their last point or respond to a question if necessary.

The apprentice may choose to end the assessment method early. The apprentice must be confident they have demonstrated competence against the assessment requirements for the assessment method. The independent assessor or EPAO must ensure the apprentice is fully aware of all assessment requirements. The independent assessor or EPAO cannot suggest or choose to end the assessment methods early, unless in an emergency. The EPAO is responsible for ensuring the apprentice understands the implications of ending an assessment early if they choose to do so. The independent assessor may suggest the assessment continues. The independent assessor must document the apprentice's request to end the assessment early.

The independent assessor must ask at least 6 questions. They must use the questions from the EPAO's question bank or create their own questions in line with the EPAO's training. Follow up questions are allowed where clarification is required.

The purpose of the independent assessor's questions is:

- to verify that the activity was completed by the apprentice
- to seek clarification where required
- to assess those KSBs that the apprentice did not have the opportunity to demonstrate with the report, although these should be kept to a minimum
- to assess level of competence against the grading descriptors

The apprentice must submit any presentation materials to the EPAO at the same time as the report - by the end of week 8 of the EPA period. The apprentice must notify the EPAO, at that point, of any technical requirements for the presentation.

During the presentation, the apprentice must have access to:

- audio-visual presentation equipment
- flip chart and writing and drawing materials
- computer

The independent assessor must have at least 2 weeks to review the project report and any presentation materials, to allow them to prepare questions.

The apprentice must be given at least 2 weeks' notice of the presentation with questions.

## **Assessment decision**

The independent assessor must make the grading decision. They must assess the project components holistically when deciding the grade.

The independent assessor must keep accurate records of the assessment. They must record:

- the KSBs demonstrated in the report and presentation with questions
- the apprentice's answers to questions
- the grade achieved

## **Assessment location**

The presentation with questions must take place in a suitable venue selected by the EPAO for example, the EPAO's or employer's premises. It should take place in a quiet room, free from distractions and influence.

The presentation with questions can be conducted by video conferencing. The EPAO must have processes in place to verify the identity of the apprentice and ensure the apprentice is not being aided.

## **Question and resource development**

The EPAO must develop a purpose-built assessment specification and question bank. It is recommended this is done in consultation with employers of this occupation. The EPAO must maintain the security and confidentiality of EPA materials when consulting with employers. The assessment specification and question bank must be reviewed at least once a year to ensure they remain fit-for-purpose.

The assessment specification must be relevant to the occupation and demonstrate how to assess the KSBs mapped to this assessment method. The EPAO must ensure that questions are refined and developed to a high standard. The questions must be unpredictable. A question bank of sufficient size will support this.

The EPAO must ensure that the apprentice has a different set of questions in the case of re-sits or re-takes.

EPAO must produce the following materials to support the project:

- independent assessor EPA materials which include:
  - training materials
  - administration materials
  - moderation and standardisation materials
  - guidance materials
  - grading guidance
  - question bank
- EPA guidance for the apprentice and the employer

The EPAO must ensure that the EPA materials are subject to quality assurance procedures including standardisation and moderation.

## **Professional discussion**

### **Overview**

In the professional discussion, an independent assessor and apprentice have a formal two-way conversation. It gives the apprentice the opportunity to demonstrate the KSBs mapped to this assessment method.

The apprentice can refer to and illustrate their answers with evidence from their portfolio of evidence.

## **Rationale**

This assessment method is being used because:

- It provides the apprentice with the opportunity to discuss and show case their depth of understanding the knowledge, skills and behaviours that may not naturally occur as part of the project.
- It allows the independent assessor to consider the context and sector that the apprentice operates within, giving flexibility to ensure that all the KSBs can be assessed appropriately.
- The professional discussion is cost effective, and it allows consideration of the potential need to conduct the EPA remotely.

## **Delivery**

The professional discussion must be structured to give the apprentice the opportunity to demonstrate the KSBs mapped to this assessment method to the highest available grade.

An independent assessor must conduct and assess the professional discussion.

Model scoping

Experiment and tracking

Model deployment

Collaborative working

Sustainability

Engineering principles

Model testing and improvement

Model management

Compliance and assurance

Collaborative working

Continuous professional development

The EPAO must give an apprentice 2 weeks' notice of the professional discussion.

The independent assessor must have at least 2 weeks to review the supporting documentation.

The apprentice must have access to their portfolio of evidence during the professional discussion.

The apprentice can refer to and illustrate their answers with evidence from their portfolio of evidence however, the portfolio of evidence is not directly assessed.

The professional discussion must last for 90 minutes. The independent assessor can increase the time of the professional discussion by up to 10%. This time is to allow the apprentice to respond to a question if necessary.

The apprentice may choose to end the assessment method early. The apprentice must be confident they have demonstrated competence against the assessment requirements for the assessment method. The independent assessor or EPAO must ensure the apprentice is fully aware of all assessment requirements. The independent assessor or EPAO cannot suggest or choose to end the assessment methods early, unless in an emergency. The EPAO is responsible for ensuring the apprentice understands the implications of ending an assessment early if they choose to do so. The independent assessor may suggest the assessment continues. The independent assessor must document the apprentice's request to end the assessment early.

The independent assessor must ask at least 6 questions. The independent assessor must use the questions from the EPAO's question bank or create their own questions in line with the EPAO's training. Follow-up questions are allowed where clarification is required.

The independent assessor must make the grading decision.

The independent assessor must keep accurate records of the assessment. They must record:

- the apprentice's answers to questions
- the KSBs demonstrated in answers to questions
- the grade achieved

## **Assessment location**

The professional discussion must take place in a suitable venue selected by the EPAO for example, the EPAO's or employer's premises.

The professional discussion can be conducted by video conferencing. The EPAO must have processes in place to verify the identity of the apprentice and ensure the apprentice is not being aided.

The professional discussion should take place in a quiet room, free from distractions and influence.

## **Question and resource development**

The EPAO must develop a purpose-built assessment specification and question bank. It is recommended this is done in consultation with employers of this occupation. The EPAO must maintain the security and confidentiality of EPA materials when consulting with employers. The assessment specification and question bank must be reviewed at least once a year to ensure they remain fit-for-purpose.

The assessment specification must be relevant to the occupation and demonstrate how to assess the KSBs mapped to this assessment method. The EPAO must ensure that questions are refined and developed to a high standard. The questions must be unpredictable. A question bank of sufficient size will support this.

The EPAO must ensure that the apprentice has a different set of questions in the case of re-sits or re-takes.

The EPAO must produce the following materials to support the professional discussion :

- independent assessor assessment materials which include:
  - training materials
  - administration materials
  - moderation and standardisation materials
  - guidance materials
  - grading guidance
  - question bank
- EPA guidance for the apprentice and the employer

The EPAO must ensure that the EPA materials are subject to quality assurance procedures including standardisation and moderation.

## **Grading**

### **Project evaluation report, presentation and questioning**

Fail - does not meet pass criteria

THEME KSBS	PASS APPRENTICES MUST DEMONSTRATE ALL OF THE PASS DESCRIPTORS	DISTINCTION APPRENTICES MUST DEMONSTRATE ALL OF THE PASS DESCRIPTORS AND ALL OF THE DISTINCTION DESCRIPTORS
<p>Model scoping K2 K3 K6 K7 S2 S4 S21</p>	<p>Outlines the stages of the machine learning lifecycle. K2</p> <p>Explains how they scope machine learning engineering solutions by translating business needs and technical problems, and using their knowledge of performance metrics. K7, S2</p> <p>Explains how they apply project management methodologies and techniques for the machine learning activities. S4</p> <p>Describes the risks of deploying new methods and models and how they assess system vulnerabilities, mitigating the threats or risks to assets and data K3, K6, K7, S21</p>	<p>Justifies the impact that mitigating the threats or risks to assets and data has on the deployment of new methods and models. K7, S2</p>
<p>Experiment and tracking K8 K9 K10 K12 K16 S3 S5 S7</p>	<p>Explains how they select and engineer techniques to develop the machine learning solution and how variables impact model performance in testing and validating analytical models. K8, S3</p> <p>Explains feature engineering, selection and pre-processing and their importance in effective machine learning. K9</p> <p>Describes deployment approaches for new data pipelines and automated processed and how they create and deploy models to produce machine learning solutions. K12, S5</p>	<p>Critically evaluates how their application of techniques ensures the validity and robustness of machine learning. K10, S7</p>

	<p>Explains how programming languages, integrated development environments and modern machine learning libraries are used. K16</p> <p>Outlines how they apply techniques for output model testing and tuning by applying their knowledge of machine learning implementation principles for data engineering solutions, in order to access accuracy, fit, validity and robustness. K10, S7</p>	
<p>Model deployment K13 S8 S10 S13 S14 S16 S20</p>	<p>Outlines the data and information security standard, ethical practices, policies and procedures relevant to data management. K13</p> <p>Explains how they track and test continual learning models in to the live environment to apply techniques for monitoring models, ensuring that they remain fit for purpose and stable. S10, S13, S14</p> <p>Explains how they ensure that the model capacity is scaled in proportion to the operating requirements and how they transition prototypes into the live environment. S16</p> <p>Explains how they support the evaluation and validation of machine learning model to minimise algorithmic bias being introduced. S20</p>	<p>Justify their decisions in relation to model capacity and the impact this has on prototypes in the live environment.S16, S20</p>
<p>Collaborative working K22</p>	<p>Describes how they create and share reports and presentations</p>	<p>None</p>



K23 S28 S29	<p>on model development and how they use methods and techniques to communicate concepts and messages, meeting the needs of the audience and confirming stakeholder approval for handover implementation. K22, S29</p> <p>Explains how they produce and maintain technical documentation using their knowledge of machine learning and data science techniques to enhance the work of other members of the team and meet technical and non-technical user requirements. K23, S28</p>	
Sustainability K17 S15 S23 B2	Explains how they take responsibility for sustainable outcomes by considering principles of data products and identifying alternative solutions, and embedding changes to deliver outcomes. K17, S15, S23, B2	None

## Professional discussion

Fail - does not meet pass criteria

THEME KSBS	PASS APPRENTICES MUST DEMONSTRATE ALL OF THE PASS DESCRIPTORS	DISTINCTION APPRENTICES MUST DEMONSTRATE ALL OF THE PASS DESCRIPTORS AND ALL OF THE DISTINCTION DESCRIPTORS
Engineering principles K1 K5 K18 K20	<p>Explains the purpose, methodologies and applications for machine learning and AI solutions. K1</p> <p>Outlines the differences and applications of machine learning methods and models. K5</p> <p>Describes the relationship between mathematical principles and core techniques in machine learning and data science within the organisational context. K18</p> <p>Explains the sources of error and algorithmic bias and how they may be affected by choice of dataset and methodologies applied using practices. K20</p>	None
Model testing and improvement K4 K14 K19 K25 S1 S9 S11 S12	<p>Articulates how they assess vulnerabilities to ensure security considerations throughout the development process and outlines the implications associated throughout at all stages of the machine learning lifecycle. K4, S1</p> <p>Explains how they evaluate choices at each stage of the data process, taking the associated regulatory legal, ethical, governance and quality control issues into consideration. S11, K25</p> <p>Summarises how they evaluate software solutions and apply machine learning and data science techniques to solve complex business problems. K19, S12</p>	Critically evaluates why they refine the model to improve solution performance. S9

	<p>Outlines how they refine the model to improve solution performance whilst recording and logging change. K14, S9</p>	
<p>Model management K11 K15 S6 S17 S18 S19 S22 S24 S25</p>	<p>Explains how they identify platform architecture and hardware and use allocated resources to apply machine learning methods in order to contribute to solving a computational problem and maximise the impact to the organisation. K11, S22</p> <p>Outlines the implications of security and scalability and the cost of local, remote or distributed solutions and how they consider the risks with using digital and physical supply chains. K15, S18, S19</p> <p>Evaluates how they monitor data curation, quality controls, model drift, data drift and performance metrics to ensure that systems are robust. S24, S25</p> <p>Explains how they work in compliance with policies, governance, industry regulation and standards to complete audit activities whilst documenting the creation and operation and management of assets during the model lifecycle. S6, S17</p>	<p>Justifies how their consideration of risk and implications has impacted on the security and scalability of machine learning and AI infrastructure. K15 S19</p> <p>Evaluates how systems are robust as a result of monitoring of data curation and controlling quality and performance of metrics. S22 S24</p>
<p>Compliance and assurance K24 K26 K27 S32 B4</p>	<p>Explains the cyber security culture in an organisation and how it may contribute to security risk for Machine Learning solutions. K27</p> <p>Outlines how they apply machine learning principles and standards in line with legislation, regulation,</p>	<p>None</p>

	<p>governance and guidance assurance frameworks ensuring organisational policies are adhered leading to the application of safe interoperable use of data. K25, S32</p> <p>Explains how they act with integrity in relation to the ethical aspects associated with the use of data and machine learning models, giving regard to legal, ethical and regulatory requirements. K26, B4, K24</p>	
<p>Collaborative working K21 K29 S26 S27 S30 B3</p>	<p>Explains how they use strategies to engage with a diverse range of stakeholders, suppliers and multi-disciplinary teams to co-ordinate, negotiate and manage expectations and deal with conflicting priorities, interest and timescales. K21, K23, S27</p> <p>Describes how they have acted inclusively when collaborating with people from technical and non-technical backgrounds whilst complying with equality diversity and inclusion policies and procedures. S30, B3</p> <p>Outlines how their own role supports the organisations strategy and objectives and how they work in unpredictable and changing circumstances to make decisions whilst respecting the opinions and views of others. K29, S26, S28</p>	<p>Justifies their strategies when working with stakeholders and how this positively impacts on the organisation. K23 S28</p>
<p>Continuous professional development K28 S31 B1</p>	<p>Explains how they use their initiative to horizon scan to identify new emerging technological developments and trends to ensure knowledge is up to date with new developments in</p>	<p>None</p>

## Overall EPA grading

Performance in the EPA determines the overall grade of:

- fail
- pass
- merit
- distinction

An independent assessor must individually grade the project evaluation report, presentation and questioning and professional discussion in line with this EPA plan.

The EPAO must combine the individual assessment method grades to determine the overall EPA grade.

If the apprentice fails one assessment method or more, they will be awarded an overall fail.

To achieve an overall pass, the apprentice must achieve at least a pass in all the assessment methods. Assessment grades follow the table included.

Grades from individual assessment methods must be combined in the following way to determine the grade of the EPA overall.

PROJECT EVALUATION REPORT, PRESENTATION AND QUESTIONING	PROFESSIONAL DISCUSSION	OVERALL GRADING
Fail	Fail	Fail
Pass	Fail	Fail
Distinction	Fail	Fail
Pass	Pass	Pass
Distinction	Pass	Merit
Distinction	Distinction	Distinction
Distinction	Pass	Merit

## Re-sits and re-takes

If the apprentice fails one assessment method or more, they can take a re-sit or a re-take at their employer's discretion. The apprentice's employer needs to agree that a re-sit or re-take is appropriate. A re-sit does not need further learning, whereas a re-take does. The apprentice should have a supportive action plan to prepare for a re-sit or a re-take.

The employer and the EPAO should agree the timescale for a re-sit or re-take. A re-sit is typically taken within 3 months of the EPA outcome notification. The timescale for a re-take is dependent on how much re-training is required and is typically taken within 6 months of the EPA outcome notification.

If the apprentice fails the project assessment method, they must amend the project output in line with the independent assessor's feedback. The apprentice will be given 2 weeks to rework and submit the amended report.

Failed assessment methods must be re-sat or re-taken within a 6-month period from the EPA outcome notification, otherwise the entire EPA will need to be re-sat or re-taken in full.

Re-sits and re-takes are not offered to an apprentice wishing to move from pass to a higher grade.

The apprentice will get a maximum EPA grade of pass if they need to re-sit or re-take one or more assessment methods, unless the EPAO determines there are exceptional circumstances.

## **Roles and responsibilities**

ROLES	RESPONSIBILITIES
Apprentice	<p>As a minimum, the apprentice should:</p> <ul style="list-style-type: none"> <li>• complete on-programme training to meet the KSBs as outlined in the apprenticeship standard for a minimum of 12 months</li> <li>• complete the required amount of off-the-job training specified by the apprenticeship funding rules and as arranged by the employer and training provider</li> <li>• understand the purpose and importance of EPA</li> <li>• prepare for and undertake the EPA including meeting all gateway requirements</li> </ul>
Employer	<p>As a minimum, the apprentice's employer must:</p> <ul style="list-style-type: none"> <li>• select the training provider</li> <li>• work with the training provider to select the EPAO</li> <li>• work with the training provider, where applicable, to support the apprentice in the workplace and to provide the opportunities for the apprentice to develop the KSBs</li> <li>• arrange and support off-the-job training to be undertaken by the apprentice</li> <li>• decide when the apprentice is working at or above the apprenticeship standard and is ready for EPA</li> <li>• ensure the apprentice is prepared for the EPA</li> <li>• ensure that all supporting evidence required at the gateway is submitted in line with this EPA plan</li> <li>• confirm arrangements with the EPAO for the EPA in a timely manner, including who, when, where</li> <li>• provide the EPAO with access to any employer-specific documentation as required for example, company policies</li> <li>• ensure that the EPA is scheduled with the EPAO for a date and time which allows appropriate opportunity for the apprentice to meet the KSBs</li> <li>• ensure the apprentice is given sufficient time away from regular duties to prepare for, and complete the EPA</li> <li>• ensure that any required supervision during the EPA period, as stated within this EPA plan, is in place</li> <li>• ensure the apprentice has access to the resources used to fulfil their role and carry out the EPA for workplace based assessments</li> </ul>

	<ul style="list-style-type: none"> <li>• remain independent from the delivery of the EPA</li> <li>• pass the certificate to the apprentice upon receipt</li> </ul>
EPAO	<p>As a minimum, the EPAO must:</p> <ul style="list-style-type: none"> <li>• conform to the requirements of this EPA plan and deliver its requirements in a timely manner</li> <li>• conform to the requirements of the apprenticeship provider and assessment register</li> <li>• conform to the requirements of the external quality assurance provider (EQAP)</li> <li>• understand the apprenticeship including the occupational standard and EPA plan</li> <li>• make all necessary contractual arrangements including agreeing the price of the EPA</li> <li>• develop and produce assessment materials including specifications and marking materials, for example mark schemes, practice materials, training material</li> <li>• maintain and apply a policy for the declaration and management of conflict of interests and independence. This must ensure, as a minimum, there is no personal benefit or detriment for those delivering the EPA or from the result of an assessment. It must cover: <ul style="list-style-type: none"> <li>• apprentices</li> <li>• employers</li> <li>• independent assessors</li> <li>• any other roles involved in delivery or grading of the EPA</li> </ul> </li> <li>• have quality assurance systems and procedures that ensure fair, reliable and consistent assessment and maintain records of internal quality assurance (IQA) activity for external quality assurance (EQA) purposes</li> <li>• appoint independent, competent, and suitably qualified assessors in line with the requirements of this EPA plan</li> <li>• appoint administrators, invigilators and any other roles where required to facilitate the EPA</li> <li>• deliver induction, initial and on-going training for all their independent assessors and any other roles involved in the delivery or grading of the EPA as specified within this EPA plan. This should include how to record the rationale and evidence for grading decisions where required</li> </ul>



	<ul style="list-style-type: none"> <li>• conduct standardisation with all their independent assessors before allowing them to deliver an EPA, when the EPA is updated, and at least once a year</li> <li>• conduct moderation across all of their independent assessors' decisions once EPAs have started according to a sampling plan, with associated risk rating of independent assessors</li> <li>• monitor the performance of all their independent assessors and provide additional training where necessary</li> <li>• develop and provide assessment recording documentation to ensure a clear and auditable process is in place for providing assessment decisions and feedback to all relevant stakeholders</li> <li>• use language in the development and delivery of the EPA that is appropriate to the level of the apprenticeship</li> <li>• arrange for the EPA to take place in a timely manner, in consultation with the employer</li> <li>• provide information, advice, and guidance documentation to enable apprentices, employers and training providers to prepare for the EPA</li> <li>• confirm the gateway requirements have been met before they start the EPA for an apprentice</li> <li>• arrange a suitable venue for the EPA</li> <li>• maintain the security of the EPA including, but not limited to, verifying the identity of the apprentice, invigilation and security of materials</li> <li>• where the EPA plan permits assessment away from the workplace, ensure that the apprentice has access to the required resources and liaise with the employer to agree this if necessary</li> <li>• confirm the overall grade awarded</li> <li>• maintain and apply a policy for conducting appeals</li> </ul>
Independent assessor	<p>As a minimum, an independent assessor must:</p> <ul style="list-style-type: none"> <li>• be independent, with no conflict of interest with the apprentice, their employer or training provider, specifically, they must not receive a personal benefit or detriment from the result of the assessment</li> <li>• have, maintain and be able to evidence up-to-date knowledge and expertise of the occupation</li> <li>• have the competence to assess the EPA and meet the requirements of the IQA section of this EPA plan</li> </ul>

	<ul style="list-style-type: none"> <li>• understand the apprenticeship's occupational standard and EPA plan</li> <li>• attend induction and standardisation events before they conduct an EPA for the first time, when the EPA is updated, and at least once a year</li> <li>• use language in the delivery of the EPA that is appropriate to the level of the apprenticeship</li> <li>• work with other personnel, where used, in the preparation and delivery of assessment methods</li> <li>• conduct the EPA to assess the apprentice against the KSBs and in line with the EPA plan</li> <li>• make final grading decisions in line with this EPA plan</li> <li>• record and report assessment outcome decisions</li> <li>• comply with the IQA requirements of the EPAO</li> <li>• comply with external quality assurance (EQA) requirements</li> </ul>
Training provider	<p>As a minimum, the training provider must:</p> <ul style="list-style-type: none"> <li>• conform to the requirements of the apprenticeship provider and assessment register</li> <li>• ensure procedures are in place to mitigate against any conflict of interest</li> <li>• work with the employer and support the apprentice during the off-the-job training to provide the opportunities to develop the KSBs as outlined in the occupational standard</li> <li>• deliver training to the apprentice as outlined in their apprenticeship agreement</li> <li>• monitor the apprentice's progress during any training provider led on-programme learning</li> <li>• ensure the apprentice is prepared for the EPA</li> <li>• work with the employer to select the EPAO</li> <li>• advise the employer, upon request, on the apprentice's readiness for EPA</li> <li>• ensure that all supporting evidence required at the gateway is submitted in line with this EPA plan</li> <li>• remain independent from the delivery of the EPA</li> </ul>

## Reasonable adjustments

The EPAO must have reasonable adjustments arrangements for the EPA.

This should include:

- how an apprentice qualifies for a reasonable adjustment
- what reasonable adjustments may be made

Adjustments must maintain the validity, reliability and integrity of the EPA as outlined in this EPA plan.

Special considerations

The EPAO must have special consideration arrangements for the EPA.

This should include:

- how an apprentice qualifies for a special consideration
- what special considerations will be given

Special considerations must maintain the validity, reliability and integrity of the EPA as outlined in this EPA plan.

## Internal quality assurance

Internal quality assurance refers to the strategies, policies and procedures that an EPAO must have in place to ensure valid, consistent and reliable EPA decisions.

EPAOs for this EPA must adhere to the requirements within the roles and responsibilities table.

They must also appoint independent assessors who:

- have recent relevant experience of the occupation or sector to at least occupational level 7 gained in the last 5 years or significant experience of the occupation or sector

## Value for money

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

- completing applicable assessment methods online, for example computer-based assessment
- utilising digital remote platforms to conduct applicable assessment methods
- using the employer's premises
- conducting assessment methods on the same day

## **Professional recognition**

This apprenticeship is not aligned to professional recognition.

## **Mapping of KSBs to assessment methods**

KNOWLEDGE	ASSESSMENT METHODS
<b>K1</b> The purpose, methodologies and applications for ML/AI solutions such as Machine Learning, Computer (Machine) Vision, Robotics, Generative/Transformer Models and Natural & Large Language Processing (NLP/LLMs) Models.	Professional discussion
<b>K2</b> The stages of the machine learning lifecycle. Including establishing the model objectives, data preparation, building and training the model, ML problem framing, testing and evaluating the model, deploying the modelling and monitoring, maintaining and updating the model using process frameworks such as CRISP-ML (Cross Industry Standard Process) Quality Assurance and either online, continuous (CLS) or batched learning systems.	Project evaluation report, presentation and questioning
<b>K3</b> Vulnerabilities related to confidentiality, authentication, non-repudiation, service integrity, network security, host OS security, physical security and the implications of these at all stages of the machine learning lifecycle.	Project evaluation report, presentation and questioning
<b>K4</b> Project Management methodologies and techniques for machine learning activities.	Professional discussion
<b>K5</b> Differences and applications of machine learning methods and models such as: supervised learning; semi supervised learning; unsupervised learning; natural language processing; reinforcement learning; ensemble learning; predictive.	Professional discussion
<b>K6</b> The risks of deploying new methods and models.	Project evaluation report, presentation and questioning
<b>K7</b> How to identify and select the performance metrics of the proposed model in the context of the business need.	Project evaluation report, presentation and questioning

<b>K8</b> How variables and features impact model performance in testing and validating analytical models.	Project evaluation report, presentation and questioning
<b>K9</b> The importance of feature engineering, selection and pre-processing in effective machine learning.	Project evaluation report, presentation and questioning
<b>K10</b> Machine learning implementation principles for data engineering solutions including quality, security, efficiency, validity, training, testing and tuning.	Project evaluation report, presentation and questioning
<b>K11</b> How machine learning methods are applied to maximise the impact to the organisation.	Professional discussion
<b>K12</b> Deployment approaches for new data pipelines and automated processes.	Project evaluation report, presentation and questioning
<b>K13</b> Data and information security standards, ethical practices, policies and procedures relevant to data management activities such as data lineage, data retention and metadata management.	Project evaluation report, presentation and questioning
<b>K14</b> Change management; recording and logging change for systems and toolsets.	Professional discussion
<b>K15</b> The implications of security, scalability, governance for ML/AI infrastructure, and cost of local, remote or distributed solutions.	Professional discussion
<b>K16</b> How to use programming languages, integrated development environments and modern machine learning libraries.	Project evaluation report, presentation and questioning

<b>K17</b> Principles of sustainable data products and organisational responsibilities for environmental social governance.	Project evaluation report, presentation and questioning
<b>K18</b> The relationship between mathematical principles and core techniques in machine learning and data science within the organisational context.	Professional discussion
<b>K19</b> How to solve problems and evaluate software solutions via analysis of test data and results from research, feasibility, acceptance and usability testing.	Professional discussion
<b>K20</b> Sources of error and algorithmic bias, including how they may be affected by choice of dataset and methodologies applied using practices such as Explicability and Explainable AI (XAI).	Professional discussion
<b>K21</b> The methods and techniques used to communicate concepts and messages to meet the needs of the audience, adapting communication techniques accordingly.	Professional discussion
<b>K22</b> Approaches and strategies to stakeholder engagement.	Project evaluation report, presentation and questioning
<b>K23</b> How machine learning and data science techniques support and enhance the work of other members of the team.	Project evaluation report, presentation and questioning
<b>K24</b> Concepts of data governance, including regulatory requirements, data privacy, security, trustworthiness and quality control.	Professional discussion
<b>K25</b> Legislation, regulation, governance and guidance assurance frameworks and their application to the safe interoperable use of data, machine learning and artificial intelligence.	Professional discussion
<b>K26</b>	Professional discussion

The ethical aspects associated with the use and collation of data and machine learning models.	
<b>K27</b> What the cyber security culture in an organisation is, and how it may contribute to security risk.	Professional discussion
<b>K28</b> How to identify trends and emerging technologies to ensure knowledge is up to date with new developments in machine learning and AI.	Professional discussion
<b>K29</b> How own role fits with, and supports, organisational strategy and objectives.	Professional discussion



SKILL	ASSESSMENT METHODS
<b>S1</b> Assess vulnerabilities of the proposed design, to ensure that security considerations are built in from inception and throughout the development process.	Professional discussion
<b>S2</b> Translate business needs and technical problems to scope machine learning engineering solutions.	Project evaluation report, presentation and questioning
<b>S3</b> Select and engineer data sets, algorithms and modelling techniques required to develop the machine learning solution.	Project evaluation report, presentation and questioning
<b>S4</b> Apply methodologies and project management techniques for the machine learning activities.	Project evaluation report, presentation and questioning
<b>S5</b> Create and deploy models to produce machine learning solutions.	Project evaluation report, presentation and questioning
<b>S6</b> Document the creation, operation and lifecycle management of assets during the model lifecycle.	Professional discussion
<b>S7</b> Apply techniques for output model testing and tuning to assess accuracy, fit, validity and robustness.	Project evaluation report, presentation and questioning
<b>S8</b> Assess system vulnerabilities and mitigate the threats or risks to assets, data and cyber security.	Project evaluation report, presentation and questioning
<b>S9</b> Refine or re-engineer the model to improve solution performance.	Professional discussion
<b>S10</b> Apply techniques for monitoring models in the live environment to check they remain fit for purpose and stable.	Project evaluation report, presentation and questioning

<b>S11</b> Consider the associated regulatory, legal, ethical and governance issues when evaluating choices at each stage of the data process.	Professional discussion
<b>S12</b> Apply machine learning and data science techniques to solve complex business problems.	Professional discussion
<b>S13</b> Track and test continual learning models.	Project evaluation report, presentation and questioning
<b>S14</b> Analyse test data, interpret results and evaluate the suitability of proposed solutions, considering current and future business requirements.	Project evaluation report, presentation and questioning
<b>S15</b> Identify and consider alternative solutions to deliver a sustainable outcome.	Project evaluation report, presentation and questioning
<b>S16</b> Transition prototypes into the live environment.	Project evaluation report, presentation and questioning
<b>S17</b> Complete audit activities in compliance with policies, governance, industry regulation and standards.	Professional discussion
<b>S18</b> Consider the risks with using digital and physical supply chains.	Professional discussion
<b>S19</b> Ensure the model capacity is scaled in proportion to the operating requirements.	Professional discussion
<b>S20</b> Support the evaluation and validation of machine learning models to minimise bias being introduced.	Project evaluation report, presentation and questioning

<b>S21</b> Monitor data curation and data quality controls.	Project evaluation report, presentation and questioning
<b>S22</b> Identify the machine learning or artificial intelligence platform architecture and specific hardware, to contribute to solving a computational problem using allocated resources.	Professional discussion
<b>S23</b> Identify and embed changes in work to deliver sustainable outcomes.	Project evaluation report, presentation and questioning
<b>S24</b> Monitor model and data drift, performance metrics to ensure systems are robust when moving outside of their domain of applicability.	Professional discussion
<b>S25</b> Develop a process to decommission assets in line with policy and procedures. Manage current and legacy models in line with industry approaches.	Professional discussion
<b>S26</b> Undertake independent, impartial decision-making respecting the opinions and views of others in complex, unpredictable and changing circumstances.	Professional discussion
<b>S27</b> Coordinate, negotiate with and manage expectations of diverse stakeholders suppliers and multi-disciplinary teams with conflicting priorities, interests and timescales.	Professional discussion
<b>S28</b> Produce and maintain technical documentation explaining the data product, that meets organisational, technical and non-technical user requirements, retaining critical information.	Project evaluation report, presentation and questioning
<b>S29</b> Create and disseminate reports, presentations and other documentation that details the model development to confirm stakeholder approval for handover to implementation.	Project evaluation report, presentation and questioning

<b>S30</b> Comply with equality, diversity, and inclusion policies and procedures in the workplace.	Professional discussion
<b>S31</b> Horizon scan to identify new technological developments that offer increased performance of data products.	Professional discussion
<b>S32</b> Apply Machine Learning principles and standards such as, organisational policies, procedures or professional body requirements.	Professional discussion
<b>BEHAVIOUR</b>	<b>ASSESSMENT METHODS</b>
<b>B1</b> Uses initiative and innovation concerning new and emerging technologies through self directed learning and horizon scanning.	Professional discussion
<b>B2</b> Takes personal responsibility and prioritises sustainable outcomes in how they carry out the duties of their role.	Project evaluation report, presentation and questioning
<b>B3</b> Acts inclusively when collaborating with people from technical and non-technical backgrounds.	Professional discussion
<b>B4</b> Acts with integrity, giving due regard to legal, ethical and regulatory requirements.	Professional discussion

## Mapping of KSBs to grade themes

### Project evaluation report, presentation and questioning

KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
Model scoping K2 K3 K6 K7 S2 S4 S21	<p>The stages of the machine learning lifecycle. Including establishing the model objectives, data preparation, building and training the model, ML problem framing, testing and evaluating the model, deploying the modelling and monitoring, maintaining and updating the model using process frameworks such as CRISP-ML (Cross Industry Standard Process) Quality Assurance and either online, continuous (CLS) or batched learning systems. (K2)</p> <p>Vulnerabilities related to confidentiality, authentication, non-repudiation, service integrity, network security, host OS security, physical security and the implications of these at all stages of the machine learning lifecycle. (K3)</p> <p>The risks of deploying new methods and models. (K6)</p>	<p>Translate business needs and technical problems to scope machine learning engineering solutions. (S2)</p> <p>Apply methodologies and project management techniques for the machine learning activities. (S4)</p> <p>Monitor data curation and data quality controls. (S21)</p>	None

	How to identify and select the performance metrics of the proposed model in the context of the business need. (K7)		
Experiment and tracking K8 K9 K10 K12 K16 S3 S5 S7	<p>How variables and features impact model performance in testing and validating analytical models. (K8)</p> <p>The importance of feature engineering, selection and pre-processing in effective machine learning. (K9)</p> <p>Machine learning implementation principles for data engineering solutions including quality, security, efficiency, validity, training, testing and tuning. (K10)</p> <p>Deployment approaches for new data pipelines and automated processes. (K12)</p> <p>How to use programming languages, integrated development environments and modern machine learning libraries. (K16)</p>	<p>Select and engineer data sets, algorithms and modelling techniques required to develop the machine learning solution. (S3)</p> <p>Create and deploy models to produce machine learning solutions. (S5)</p> <p>Apply techniques for output model testing and tuning to assess accuracy, fit, validity and robustness. (S7)</p>	None

<p>Model deployment K13 S8 S10 S13 S14 S16 S20</p>	<p>Data and information security standards, ethical practices, policies and procedures relevant to data management activities such as data lineage, data retention and metadata management. (K13)</p>	<p>Assess system vulnerabilities and mitigate the threats or risks to assets, data and cyber security. (S8)</p> <p>Apply techniques for monitoring models in the live environment to check they remain fit for purpose and stable. (S10)</p> <p>Track and test continual learning models. (S13)</p> <p>Analyse test data, interpret results and evaluate the suitability of proposed solutions, considering current and future business requirements. (S14)</p> <p>Transition prototypes into the live environment. (S16)</p> <p>Support the evaluation and validation of machine learning models to minimise bias being introduced. (S20)</p>	<p>None</p>
<p>Collaborative working K22 K23 S28 S29</p>	<p>Approaches and strategies to stakeholder engagement. (K22)</p> <p>How machine learning and data science techniques</p>	<p>Produce and maintain technical documentation explaining the data product, that meets organisational, technical and non-technical user</p>	<p>None</p>

	support and enhance the work of other members of the team. (K23)	requirements, retaining critical information. (S28)  Create and disseminate reports, presentations and other documentation that details the model development to confirm stakeholder approval for handover to implementation. (S29)	
Sustainability K17 S15 S23 B2	Principles of sustainable data products and organisational responsibilities for environmental social governance. (K17)	Identify and consider alternative solutions to deliver a sustainable outcome. (S15)  Identify and embed changes in work to deliver sustainable outcomes. (S23)	Takes personal responsibility and prioritises sustainable outcomes in how they carry out the duties of their role. (B2)

## Professional discussion



KSBS GROUPED BY THEME	KNOWLEDGE	SKILLS	BEHAVIOUR
Engineering principles K1 K5 K18 K20	<p>The purpose, methodologies and applications for ML/AI solutions such as Machine Learning, Computer (Machine) Vision, Robotics, Generative/Transformer Models and Natural &amp; Large Language Processing (NLP/LLMs) Models. (K1)</p> <p>Differences and applications of machine learning methods and models such as: supervised learning; semi supervised learning; unsupervised learning; natural language processing; reinforcement learning; ensemble learning; predictive. (K5)</p> <p>The relationship between mathematical principles and core techniques in machine learning and data science within the organisational context. (K18)</p> <p>Sources of error and algorithmic</p>	None	None

	<p>bias, including how they may be affected by choice of dataset and methodologies applied using practices such as Explicability and Explainable AI (XAI). (K20)</p>		
<p>Model testing and improvement K4 K14 K19 K25 S1 S9 S11 S12</p>	<p>Project Management methodologies and techniques for machine learning activities. (K4)</p> <p>Change management; recording and logging change for systems and toolsets. (K14)</p> <p>How to solve problems and evaluate software solutions via analysis of test data and results from research, feasibility, acceptance and usability testing. (K19)</p> <p>Legislation, regulation, governance and guidance assurance frameworks and their application to the safe interoperable use of data, machine learning and artificial intelligence. (K25)</p>	<p>Assess vulnerabilities of the proposed design, to ensure that security considerations are built in from inception and throughout the development process. (S1)</p> <p>Refine or re-engineer the model to improve solution performance. (S9)</p> <p>Consider the associated regulatory, legal, ethical and governance issues when evaluating choices at each stage of the data process. (S11)</p> <p>Apply machine learning and data science techniques to solve complex business problems. (S12)</p>	<p>None</p>

<p>Model management K11 K15 S6 S17 S18 S19 S22 S24 S25</p>	<p>How machine learning methods are applied to maximise the impact to the organisation. (K11)</p> <p>The implications of security, scalability, governance for ML/AI infrastructure, and cost of local, remote or distributed solutions. (K15)</p>	<p>Document the creation, operation and lifecycle management of assets during the model lifecycle. (S6)</p> <p>Complete audit activities in compliance with policies, governance, industry regulation and standards. (S17)</p> <p>Consider the risks with using digital and physical supply chains. (S18)</p> <p>Ensure the model capacity is scaled in proportion to the operating requirements. (S19)</p> <p>Identify the machine learning or artificial intelligence platform architecture and specific hardware, to contribute to solving a computational problem using allocated resources. (S22)</p> <p>Monitor model and data drift, performance metrics to ensure systems are robust when moving outside of their domain of applicability. (S24)</p>	<p>None</p>
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		Develop a process to decommission assets in line with policy and procedures. Manage current and legacy models in line with industry approaches. (S25)	
Compliance and assurance K24 K26 K27 S32 B4	<p>Concepts of data governance, including regulatory requirements, data privacy, security, trustworthiness and quality control. (K24)</p> <p>The ethical aspects associated with the use and collation of data and machine learning models. (K26)</p> <p>What the cyber security culture in an organisation is, and how it may contribute to security risk. (K27)</p>	Apply Machine Learning principles and standards such as, organisational policies, procedures or professional body requirements. (S32)	Acts with integrity, giving due regard to legal, ethical and regulatory requirements. (B4)

<p>Collaborative working K21 K29 S26 S27 S30 B3</p>	<p>The methods and techniques used to communicate concepts and messages to meet the needs of the audience, adapting communication techniques accordingly. (K21)</p> <p>How own role fits with, and supports, organisational strategy and objectives. (K29)</p>	<p>Undertake independent, impartial decision-making respecting the opinions and views of others in complex, unpredictable and changing circumstances. (S26)</p> <p>Coordinate, negotiate with and manage expectations of diverse stakeholders suppliers and multi-disciplinary teams with conflicting priorities, interests and timescales. (S27)</p> <p>Comply with equality, diversity, and inclusion policies and procedures in the workplace. (S30)</p>	<p>Acts inclusively when collaborating with people from technical and non-technical backgrounds. (B3)</p>
<p>Continuous professional development K28 S31 B1</p>	<p>How to identify trends and emerging technologies to ensure knowledge is up to date with new developments in machine learning and AI. (K28)</p>	<p>Horizon scan to identify new technological developments that offer increased performance of data products. (S31)</p>	<p>Uses initiative and innovation concerning new and emerging technologies through self directed learning and horizon scanning. (B1)</p>



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