END-POINT ASSESSMENT PLAN

Digital and Technology Solutions Specialist Integrated Degree Apprenticeship

Level 7

Contents

1. Introduction and Overview

The Digital and Technology Solution Specialist Integrated Degree Apprenticeship takes typically 18 months to complete with a minimum of 20% off-the-job training. Successful completion of the end-point assessment leads to completion of the apprenticeship, which includes the MSc Digital and Technology Solution Specialist Master's Degree.

During the on-programme stage, the apprentice will develop the technical competencies, technical knowledge and understanding, underpinning professional, interpersonal and business skills, and behaviours that are necessary to operate as a fully competent Digital and Technology Solution Specialist.

The end-point assessment (EPA) gives the apprentice the opportunity to demonstrate that they have attained the skills, knowledge and behaviours set out on the standard.

There are two parts to the end-point assessment:

(a) A Project Report (a written account of a set of practical tasks undertaken within a work based project context), which the independent assessor assesses and grades.

(b) A Professional Discussion (a structured discussion with the independent assessor allowing the apprentice to respond to questions using a portfolio), which the independent assessor assesses and grades.

The assessment methods are designed to assess the full set of knowledge, skills and behaviours as specified in the standard. Annex A shows which knowledge, skill or behaviour outcome is being assessed by which assessment method. A failure to pass either one of the methods means that the apprentice has failed overall and neither the apprenticeship nor the master's degree will be awarded. This is just until the failed assessment has been passed.

This is an integrated Master's degree level apprenticeship (MSc), which incorporates on-programme academic and workplace learning and assessment with an independent end-point assessment to test the knowledge, skills and behaviours detailed in the standard. The awarding University will be responsible for end-point assessment requirements. The Independent Assessor will be from an awarding University who is listed on the Register of End-Point Assessment Organisations and who has not been involved in the delivery of the programme. Independent assessors should be sourced from staff that are independent of the delivery of the programme and will be either distinctly separate from the delivery team within the same university or from another university. The Independent Assessor will assess and grade against the outcomes in the Standard. Apprentices cannot successfully complete the master's degree without passing the EPA and vice versa. Performance in the EPA will determine the apprenticeship grade of pass, merit, distinction or fail.

The EPA should only start once the employer is satisfied that the apprentice is consistently working at or above the level set out in the standard, the pre-requisite gateway requirements for the EPA have been met and they can be evidenced to the university acting as the EPA organisation.

The EPA must be completed over a maximum total assessment time of three months after the apprentice has met the gateway requirements.

Once the Project Report and Professional Discussion have been completed and assessed, the apprenticeship ends and the apprentice will be awarded a fail, pass, merit or distinction by the independent assessor. The circumstances in which re-sits or re-takes may take place is set out later in this plan.

The remainder of this end-point assessment plan sets out the approach to this end-point assessment, including what will be assessed, how it will be assessed and the role of the respective parties in the assessment process.

2 **End-Point Assessment Gateway**

The EPA should only start once the employer is satisfied, with support from the HEI (in its role as the registered apprentice training provider) that the apprentice is consistently working at or above the level set out in the standard, the prerequisite gateway requirements for EPA have been met and they can be evidenced to the EPA organisation.

Gateway Requirements:

1. The opinion of the employer is that the apprentice is ready for the end-point assessment

2. Completion of all the modules in the MSc Digital and Technology Solution Specialist programme that the Higher Education Institute will develop to cover all the Technical Competencies, Knowledge and Understanding, and behaviours listed on the Digital and Technology Solution Specialist Standard

3. Pass Level 2 English and maths (if not already achieved)

4. Complete a capstone project of 60 credits, in order to inform the project report, which is one of the end point assessment methods

5. Confirmation that the apprentice has produced a portfolio in relation to evidencing the core skills, knowledge and behaviours towards the end of the apprenticeship

Project requirements:

Toward the end of the on-programme delivery the HEI will agree a business-related project with the apprentice's employer and apprentice based on their job role and the specialism that they are undertaking as part of the Digital and Technology Solution Specialist Master's Degree.

The agreed project will present a typical business task, appropriate for demonstrating the skills and knowledge on the standard. The agreed project will be comparable in terms of content and complexity for all apprentices - it is the context within which the knowledge, and skills must be demonstrated that will vary. Each project will take, typically, six months to complete. The project is undertaken and completed on programme and pre-gateway to the EPA. The project itself is not part of the EPA. The project will typically be undertaken on the employer's premises or where this is not practical on the HEI premises.

Projects will balance the need to 1) be specific to ensure consistency and comparability and 2) be sufficiently flexible to enable apprentices to apply the approaches they use in their role.

Portfolio requirements:

The portfolio presents evidence from real-work projects (excluding the project from which the assessed Project Report is produced) and is used to help the apprentice to answer questions in the Professional Discussion. The portfolio will be created pre-gateway and before end-point assessment starts and must not be assessed on programme. It contains evidence from projects that have been completed, usually, towards the end of the apprenticeship. It will showcase elements of work that describe the apprentice's competences against each of the areas identified in Annex A in relation to the Professional Discussion EPA, enabling them to demonstrate how they have applied their knowledge, skills and behaviours in a real-work environment to achieve real-work objectives. The portfolio is not evidence that the learning has taken place, but is evidence that the apprentice has applied the knowledge, skills and behaviours in the Standard.

Employers, with support from the university (as apprenticeship delivery organisation), will assist the apprentice to assemble their portfolio to ensure that the portfolio is complete, that it covers the required knowledge, skills and behaviours in Annex A for the Professional Discussion and has been completed to a satisfactory standard. The employer and degree delivery HEI should review the portfolio with the apprentice and the employer will make the final judgement on whether it should be submitted or needs revising. The portfolio is not directly assessed; it is used to frame the professional discussion, where KSBs are to be assessed.

The portfolio must be an e portfolio presented digitally or on line produced towards the end of their apprenticeship. It must include:

- a contents list and mapping against the knowledge, skills and behaviours;
- a brief introduction/commentary by the apprentice, and highlighting, where appropriate, anything they would do differently;
- evidence from two pieces of work that cover the core KSB's and that will provide a structure for the professional discussion;
- two witness testimonies; one from a line manager and the other from a colleague in the workplace;
- a testimonial from the employer, relating particularly to behaviours shown in the workplace;
- reflective statements to demonstrate the business impact achieved during their apprenticeship;
- evidence of teamworking;
- validation of work completed;
- a signed statement from the employer and university confirming this is the apprentice's own work and that, in their view, the work demonstrates the required competence against the Standard; and
- a signed statement from the apprentice confirming this as their own work.

End-point assessment organisations should develop a template and/or guidance for employers to ensure the testimonial covers the areas it needs to.

The portfolio will be completed pre-gateway and provided to the independent assessor as a requirement to pass the gateway requirements as set out above.

3. End-Point Assessment Methods

There are two parts to the end-point assessment:

(a) A Project Report (based upon a set of practical tasks within a project, the outputs of which in the form of the Project Report the independent assessor assesses and grades). The Project Report is designed to focus on consistently assessing apprentices in line with their area of specialism and putting this into context of their job role.

(b) A Professional Discussion (a structured discussion with the independent assessor who assesses and grades performance)

Both the methods must be passed.

The EPA uses the Project Report and Professional Discussion as assessment methods and they should be undertaken in that order.

Assessment Method	Areas Assessed	Assessed by	Grading
Project Report	Apprentices undertake a Project Report based on the work undertaken in the on-programme project which is assessed against the defined set of KSBs as in annex B	Independent Assessor from an EPAO from the Register of End-Point Assessment Organisations	Fail Pass Merit Distinction
Professional Discussion	Apprentices undertake a Professional Discussion which is assessed against the defined set of KSBs as in annex B	The same Independent Assessor as above	Fail Pass Merit Distinction

3.1 The Project Report Requirements

Practical requirements for the Project Report

The EPA organisation approves all project proposals to ensure projects provide sufficient scope to meet assessment requirements. Agreement of the project proposal will take place prior to commencement of the on-programme project and must be agreed between the HEI, the employer, the apprentice and the EPA assessor. A project terms of reference is then prepared and used as the basis of defining, setting the scope and deliverables of the project.

Once agreed between the HEI, employer, apprentice and EPA assessor then the project terms of reference are signed by each of these stakeholders.

The Project Report is likely to take around 10 days to complete. The apprentice must be given time to draft the Project Report. The Project Report should be presented in the form of a hard copy printed report, but should also be provided in electronic form (e.g. word document). Reasonable adjustments must be made for apprentices who need them (e.g. for those with a disability) in line with normal end-point assessment organisation procedures. Apprentices must submit the report to the end-point assessment organisation within six weeks of the agreed EPA start date (the point at which the apprentice passes the gateway). The end-point assessment organisation will then organise for the report to be passed to their appointed independent assessor. On completion of the Project Report, the apprentice must provide a signed statement to confirm it is her/his own work.

Content of the Project Report

The apprentice will compose a 10,000 (+/- 10%) written essay in which they will demonstrate all the specialism skills and knowledge as set out in Annex A.

The Project Report should cover the project terms of reference, the apprentice's responsibilities, the action taken by the apprentice (in planning and executing the project) and results and conclusions. The report should be properly laid out as a business style report with an executive summary.

The report must include an annex containing a maximum of 4 pieces of evidence relating to the project. Example evidence may include software developed, spreadsheets, databases, models and analyses etc. This list is not definitive and other evidence sources are permitted. The annex must include a mapping of the evidence to the knowledge and skills assessed by this assessment method.

A typical Project Report is organised in the following way:

- Executive summary. (This is no more than one side - which summarizes the content of the report. It must be comprehensible to someone who has not read the rest of the report.)
- Introduction. (The scope or hypothesis of the project and terms of reference, setting the scene for the remainder of the report.)
- Background. (A review chapter, describing the background work or research undertaken at the beginning of the project period.)
- Work undertaken: Several chapters describing the work that has been undertaken.
- Outputs. A chapter describing the outputs, deliverables or artefacts that have been produced as a result of the project.
- Further work. (A chapter describing possible ways in which the work could be continued or developed.)
- Conclusions. (A statement of conclusions relating to the work done, and outputs produced to the initial hypothesis and terms of reference.)
- References, annex and appendices.

Assessment of the Project Report

The independent assessor assesses the report against the knowledge, skills and behaviours in Annex A and grades the project report based on the descriptors in Annex B.

The project report is assessed by the independent assessor (from the HEI which is registered as an end-point assessment organisation for this Standard) who makes her/his own judgement on the quality of the Project Report, based on the knowledge and skills set out in Annex A.

All independent assessors should allocate sufficient time to read and understand projects assigned to them. They should make sure that they are familiar with the standard and the marking scheme. The report will be marked using a Project Report assessment scheme developed by the end-point assessment organisation. The assessment scheme aims to examine students on their attainment with respect to the knowledge and skills identified in Annex A.

3.2 The Professional Discussion Requirements

The apprentice will only proceed to take the Professional Discussion assessment if he/she has completed the Project Report assessment element. The passing of each EPA assessment method is independent of each other, and not a pre-requisite to proceed with the Professional Discussion.

Practical Requirements for the Professional Discussion:

- The Professional Discussion will take place only following the submission of the Project Report.
- The apprentice should have at least seven days' notice of the date /time and location of the Professional Discussion assessment
- The independent assessor prepares for the Professional Discussion by reviewing the portfolio content in advance of the Professional Discussion.
- The Professional Discussion will last 90 minutes (+/- 10%) of which 30 minutes should be focussed on the content of the portfolio.
- The Professional Discussion will be conducted face to face or in exceptional circumstances via live video media.
- The Professional Discussion will be conducted in a suitable location. This may be at the university or employer location as appropriate.
- The independent assessor must put the apprentice at ease and give the apprentice the opportunity to do his/her very best.

Content

- The Professional Discussion will focus on assessing how the core knowledge, skills and behaviours outcomes have been achieved and will not relate to the Project Report.
- A standard framework of Professional Discussion questions will be defined by the end-point assessment organisation and must cover the outcomes specified in Annex A.

- There should be a minimum of four questions covering the main themes of the core skills, knowledge and behaviours (business and change management, professional competencies, leadership and technology management). The independent assessor will use the questions to verify that outcomes have been met and will explore any gaps or areas of uncertainty following their reading of the portfolio.

The Professional Discussion should give the apprentice the best possible opportunity to get the best possible result. The purpose of the Professional Discussion is to gather sufficient evidence, primarily by discussing the work submitted in the portfolio, against all the identified knowledge, skills and behaviours in the Annex A for the independent assessor to determine whether the minimum standards have been achieved or not and whether they have been significantly exceeded to inform the decision about the grade to be awarded (see grading criteria in Annex B). The independent assessor will grade this method in accordance with the descriptors in Annex B.

The apprentice uses their portfolio to answer questions in the professional discussion and may also reference other work they have undertaken in the workplace. The Professional Discussion will not reference the Project Report, as this evidence has already been assessed. Both the independent assessor and the apprentice will have access to the portfolio before and during the Professional Discussion and the apprentice can also bring any additional documentation they may want to use.

Practical arrangements

The Professional Discussion is undertaken by the same independent assessor, who will make the grading decision.

The independent assessor will:

- Give the apprentice the best possible opportunity to get the best possible result from the Professional Discussion
- Ask open questions to guide the apprentice to illustrate through the Professional Discussion the knowledge, skills and behaviours being tested through this method.

The Professional Discussion will be conducted in a suitable location which may be at the HEI or employer location as appropriate. It will be conducted face to face or, if that is impractical (e.g. if the apprentice is in the armed forces and abroad), via live media. The Professional Discussion will be recorded.

Delivery of the Professional Discussion

To assist the independent assessor, a structured brief and framework of questions will be developed by the end-point assessment organisation. EPAOs must develop 'practical specification banks' of sufficient size to prevent predictability and review them regularly (and at least once a year) to ensure they, and the specifications they contain, are fit for purpose. In addition, a clear set of assessment criteria will be developed by the end-point assessment organisation based on Annex A and the fail / pass / merit / distinction descriptors in Annex B, and this will also be provided to the apprentice prior to them undertaking the Professional Discussion.

The Professional Discussion is a one-to-one, although a second independent assessor may be present for moderation or training purposes and/or when reasonable adjustments are required.

The main points from the Professional Discussion and the conclusions, will be documented by the independent assessor within 48 hours of it being completed. Reasonable adjustments must be made by the end-point assessment organisation for people who need them (e.g. people with a disability).

Assessment of the Professional Discussion

The independent assessor assesses the discussion against the knowledge, skills and behaviours in Annex A and grades the Professional Discussion based on the descriptors in Annex B.

Preparation for the Professional Discussion

The independent assessor will undertake a review of the portfolio in advance of the Professional Discussion. This will enable the independent assessor to determine the relevant questions. Whist all the identified knowledge, skills and behaviours must be explored as part of the Professional Discussion, the independent assessor will determine those particular knowledge, skills and behaviours they need to probe in more depth in order to elicit sufficient evidence against the grading criteria.

4. Final Grading Judgement

The final judgement decision as to whether the apprentice has passed the end-point assessment is made by the independent assessor who will be employed by the end-point assessment organisation which, itself, must be on the Register of End-Point Assessment Organisations. The independent assessor must not have been involved in the delivery of the programme.

An apprentice must pass both EPA methods in order to pass the apprenticeship overall.

Re-takes and re-sits

The apprentice must pass both methods of end-point assessment as part of the EPA. If the apprentice fails either the Project Report or the Professional Discussion, then they will be deemed to have failed the apprenticeship. The apprentice may re-sit the Project Report and/or the Professional Discussion within six months of having been informed of the failure of either, otherwise the entire EPA must be retaken. Once an end-point assessment method has been passed, it does not have to be re-taken. For example, if the apprentice passes the Project Report but fails the Professional Discussion, he/she can re-sit the Professional Discussion without having to re-sit the Project Report. A re-sit does not require further learning, whereas a re-take does. Subject to the timescales set out above, there are no limits to the number of times an apprentice may re-take/re-sit any of the end-point assessment methods but each time the employer must be satisfied that the apprentice is ready. No method can be re-taken just to increase the grade (re-takes only enable the apprentice to go from a fail to pass or beyond). End-point Assessment Organisations must ensure that the apprentice produces a new Project

Report when taking a re-sit/retake. This must contain different evidence in the annex thus necessitating the rewriting of the content of the report.

5. Passing and Grading

This section sets out:

1. How each individual end-point assessment method is assessed, passed and graded
2. How the combination of graded end-point assessment methods leads to the overall apprenticeship pass and grade

5.1 Passing and Grading each End-Point Assessment Method

Each of the two end-point assessment methods is graded. The independent assessor must individually grade each end-point assessment method – fail, pass, merit or distinction. This is based on the apprentice demonstrating the themes aligned to the knowledge, skills and behaviours that have been assigned to that end-point assessment method as set out in Annex A. Annex B sets out the grading descriptors for fail, pass, merit and distinction for each of the two EPA methods.

5.2 End-point Assessment – Grading Allocation

Apprenticeship Grading

Performance in the EPA will determine the apprenticeship grade of pass, merit, distinction or fail.

Each end-point assessment method will be marked and graded, and each should be passed. The individual grades will then be aggregated to produce the final apprenticeship grade. To gain an apprenticeship pass or higher grade, the apprentice must achieve a minimum of a pass in each method. An apprenticeship pass represents full competence against the standard. A grade of merit or distinction means an apprentice is demonstrating competence above the standard.

Master's Degree Grading

The degree will be classified in accordance with the University integrated degree regulations. If an apprentice fails the EPA a degree cannot be awarded and vice versa.

5.3 Passing and Grading the Apprenticeship Overall

The EPA must be completed over a maximum total end-point assessment time of 3 months after the apprentice has met the gateway requirements.

To pass the end-point assessment, the apprentice must pass both methods (Project Report and Professional Discussion). If an apprentice fails either of these methods, he/she will have failed the end-point assessment and he/she will not be awarded the degree or the apprenticeship.

The final overall apprenticeship grading is achieved by combining the grading results

from the two end-point assessment methods as follows:

The table below shows how an overall grade for the apprenticeship is achieved.

Project Report	Professional Discussion	Overall Grade
Pass	Pass	Pass
Pass	Merit	Pass
Pass	Distinction	Pass
Merit	Pass	Merit
Merit	Merit	Merit
Merit	Distinction	Merit
Distinction	Pass	Merit
Distinction	Merit	Distinction
Distinction	Distinction	Distinction

5.4 Passing and Grading Requirements

The table in Annex B provides definitions of a fail, pass, merit or distinction for each method.

6. Quality Assurance

6.1 Internal

Internal quality assurance refers to the requirements that the End-point Assessment organisation must have in place to ensure consistent (reliable) and accurate (valid) assessment decisions. EPA organisations for this EPA must undertake the following:

- Develop and provide end-point assessment guidance to apprentices, employers, on-programme HEI personnel and the independent assessor in relation to the end-point assessment requirements
- Ensure the apprentices, employers, on-programme HEI personnel and the independent assessor are all aware of the Technical Competencies, Technical Knowledge and understanding, Underpinning professional, interpersonal and business skills, and Behaviour requirements (as set out in the Standard) and the grading criteria (as set out in this End-Point Assessment Plan)
- Develop compensatory assessment for learners with special requirements to allow reasonable adjustments to be made to assess the apprentice (for example, sign language support if necessary). Whilst these will remove barriers to participation, they must be designed to ensure judgements are not compromised for health and safety and legal requirements
- Appoint the independent assessor and ensure she or he is competent to do the job (see criteria below) and understands the terms of the requirements of the operation and marking of the end-point assessment methods and in undertaking fair and impartial assessment (training personnel where necessary)
- Monitor and provide support to the independent assessors where required to ensure consistent end-point assessment
- Develop and provide documentation for recording end-point assessment decisions
- Hold annual standardisation events for independent assessors to ensure consistent application of the guidance

- Provide immediate guidance where end-point assessments need to be halted due to unforeseen circumstances e.g. system emergency, apprentice illness
- Ensure the independent assessors undertake regular continuing professional development
- Confirm that they have not been involved in any way in teaching the apprentice they are assessing whilst that apprentice was on the programme
  - Operate moderation of end-point assessment activity and decisions, through examination of documentation and observation activity, with a minimum of 5 or 15% (whichever is greater) of each independent assessor's end-point assessments moderated
- Ensure those undertaking end-point assessments have the necessary skills and industry knowledge to make reliable judgements as set out below:
  Independent assessors can be appointed if they show appropriate evidence, which is likely to be by providing an outline career summary of satisfying the following criteria:
  - competence and experience in the fields covered by the relevant specialism in the Standard academic qualifications to at least MSc level in the field of the specialism (e.g. software engineering etc.) together with a minimum of 3 years' experience in that field obtained no later than two years ago.
  - competence and experience (minimum three years, obtained no later than two years ago) relating to operating a variety of assessment tasks appropriate to the subject and operating assessment procedures
  - familiarity with the apprenticeship standard and specialism defined in that standard related to the apprenticeship being undertaken

In addition, independent assessors must have completed an induction to demonstrate a working knowledge of the apprenticeship Standard and the end-point assessment process. They must be fully trained and approved for use of each of the end-point assessment tools and be trained in the consistent application of the grading criteria.

Anyone who undertakes end-point assessment must be held on a register by the registered end-point assessment organisation. The register must confirm that each individual undertaking end-point assessment has satisfied the defined criteria.

6.2 External

The Institute for Apprenticeships is exploring whether QAA can undertake external quality assurance for this standard and arrangements will be confirmed by the end of 2018.

7. Implementation

Affordability

The approach presented offers an affordable and scalable solution to end-point assessment for this apprenticeship.

The following factor should ensure the EPA is affordable

- Project Reports should be able to be submitted remotely via secure postage where the apprentice cannot easily deliver the report in person to the HEI

- The venue for the Professional Discussion may be either at employer premises, the delivery HEI or other suitable location to minimise travel costs for apprentices especially where there are large cohorts

- The Professional Discussions should be grouped to take place on the same day where practical

Consistency

All UK universities must follow the Quality Assurance Agency for High Education (QAA) code of practice for assurance of academic quality and standards in higher education.

The methodology detailed above and the use of University External Examiners will ensure nationwide consistency.

Volumes

We estimate that there will be approximately 250 starts per annum on this integrated degree apprenticeship at steady state.

8. Who is involved?

End Point Assessment summary of roles and responsibilities:

Assessor	Role
Independent Assessor From a university on the Register of End-Point Assessment Organisations. The independent assessor must not have been involved in the delivery of the programme	Assesses and grades the Project Report Assesses and grades the Professional Discussion Combines component results of Project and Professional Discussion to determine the overall EPA grade.
End-Point Assessment Organisation A university on the Register of End-Point Assessment Organisations	Manages the End-Point Assessment Process
Employer	Confirms the apprentice is ready for end-point assessment, in consultation with the university Supports the apprentice in putting together their portfolio, including an employer testimonial Liaises with the university (as end-point assessment organisation and provider), to ensure the arrangements for end-point assessment are in place

ANNEX A – Mapping of KSBs to assessment methods   In the table below PR stand for Project Report and PD stands for Professional Discussion.

Core Skills , Core Knowledge and Core Behaviours to be assessed	Methods of Assessment	
Business and change management		
(Skill) Identify, document, review and design complex IT enabled business processes that define a set of activities that will accomplish specific organisational goals and provides a systematic approach to improving those processes;	PR	
(Skill) Design and develop technology roadmaps, implementation strategies and transformation plans focused on digital technologies to achieve improved productivity, functionality and end user experience in an area of technology specialism;		PD
(Skill) Deliver workplace transformations through planning and implementing technology based business change programmes including setting objectives, priorities and responsibilities with others in an area of technology specialism;		PD
(Knowledge) The strategic importance of technology enabled business processes, and how they are designed and managed to determine a firm's ability to compete effectively;		PD
(Knowledge) The principles of business transformation and how organisations integrate different management functions in the context of technological change;		PD
(Knowledge) Own employer's business objectives and strategy, its position in the market and how own employer adds value to its clients through the services and/or products they provide;		PD
(Knowledge) How to justify the value of technology investments and apply benefits management and realisation;		PD
Professional competencies		
(Skill) Negotiate and agree digital and technology specialism delivery budgets with those with decision-making responsibility;		PD
(Skill) Develop and deliver management level presentations which resonate with senior stakeholders, both business and technical;		PD
(Skill) Professionally present digital and technology solution specialism plans and solutions in a well-structured business report;	PR	
(Skill) Demonstrate self-direction and originality in solving problems, and act autonomously in planning and implementing digital and technology solutions specialist tasks at a professional level;	PR	
(Skill) Be competent at negotiating and closing techniques in a range of interactions and engagements, both with senior internal and external stakeholders;	PR	
(Knowledge) The role of learning and talent management in successful business operations.		PD
Leadership		
(Skill) Evaluate the significance of human factors to leadership in the effective implementation and management of technology enabled business processes;		PD
(Skill) Develop own leadership style and professional values that contributes to building high performing teams;		PD
(Behaviour) Inspire and motivate others to deliver excellent technical solutions and outcomes		PD
(Behaviour) Establish high levels of performance in digital and technology solutions activities		PD
(Behaviour) Be results and outcomes driven to achieve high key performance outcomes for digital and technology solutions objectives		PD
(Behaviour) Promote a high level of cooperation between own work group and other groups to establish a technology change led culture		PD

(Behaviour) Develop and support others in developing an appropriate balance of leadership and technical skills		PD
(Behaviour) Create strong positive relationships with team members to produce high performing technical teams		PD
(Knowledge) The role of leadership in contemporary technology based organisations;		PD
(Knowledge) The personal leadership qualities that are required to establish and maintain an organisations technical reputation.		PD
(Knowledge) The role of leaders as change agents and identify contributors to successful implementation;		PD
Technology management		
(Skill) Apply broader technical knowledge combined with an understanding of the business context, and how it is changing, to deliver to the company's business strategy;		PD
(Skill) Demonstrate effective technology leadership and change management skills for managing technology driven change and continuous improvement;		PD
(Skill) Create and implement innovative technological strategies to support the development of new products, processes and services that align with the company's business strategy, and develop and communicate compelling business proposals to support these.		PD
(Knowledge) How to monitor technology related market trends and research and collect competitive intelligence;		PD
(Knowledge) Technology road-mapping concepts and methods and how to apply them;		PD
Software Engineering Specialist Skills to be assessed	**Methods of Assessment**	
Architect, build and support leading edge concurrent software platforms that are performant to industry standards and deliver responsive solutions with good test coverage;	PR	
Drive the technology decision-making and development process for projects of varying scales, considering current technologies including DevOps and Cloud Computing, and evaluate different technology design and implementation options making reasoned proposals and recommendations;	PR	
Develop and deliver, distributed or semi-complex software solutions that are scalable and which deliver innovative user experiences and journeys that encompass cross-functional teams, platforms and technologies;	PR	
Update current software products, improving the efficiency and functionality, and build new features to product specifications;	PR	
Accomplish planned software development tasks that deliver the expected features, within specified time constraints, security and quality requirements;	PR	
Be accountable for the quality of deliverables from one or more software development teams (source code quality, automated testing, design quality, documentation etc.) and following company standard processes (code reviews, unit testing, source code management etc.).	PR	
Software Engineering Specialist Knowledge to be assessed	**Methods of Assessment**	
The rationale for software platform and solution development, including the organisational context;		PD
The various inputs, statements of requirements, security considerations and constraints that guide solution architecture and the development of logical and physical systems' designs;	PR	
The methodologies designed to help create approaches for organizing the software engineering process, the activities that need to be undertaken at different stages in the life-cycle and techniques for managing risks in delivering software solutions;	PR	
The approaches used to modularise the internal structure of an application and describe the structure and behaviour of applications used in a business, with a focus on how they interact with each other and with business users;	PR	
How to design, develop and deploy software solutions that are secure and effective in delivering the requirements of stakeholders and the factors that affect the design of a successful code;	PR	

The range of metrics which might be used to evaluate a delivered software product.	**PR**	
Data Analytics Specialist Skills to be assessed	**Methods of Assessment**	
Identify and select the business data that needs to be collected and transitioned from a range of data systems; acquire, manage and process complex data sets, including large-scale and real-time data;	**PR**	
Undertake analytical investigations of data to understand the nature, utility and quality of data, and developing data quality rule sets and guidelines for database designers;	**PR**	
Formulate analysis questions and hypotheses which are answerable given the data available and come to statistically sound conclusions;	**PR**	
Conduct high-quality complex investigations, employing a range of analytical software, statistical modelling & machine learning techniques to make data driven decisions solve live commercial problems;	**PR**	
Document and describe the data architecture and structures using appropriate data modelling tools, and select appropriate methods to present data and results that support human understanding of complex data sets;	**PR**	
Scope and deliver data analysis projects, in response to business priorities, create compelling business opportunities reports on outcomes suitable for a variety of stakeholders including senior clients and management.	**PR**	
Data Analytics Specialist Knowledge to be assessed	**Methods of Assessment**	
How key algorithms and models are applied in developing analytical solutions and how analytical solutions can deliver benefits to organisations;	**PR**	
The information governance requirements that exist in the UK, and the relevant organisational and legislative data protection and data security standards that exist. The legal, social and ethical concerns involved in data management and analysis;		**PD**
The principles of data driven analysis and how to apply these. Including the approach, the selected data, the fitted models and evaluations used to solve data problems;	**PR**	
The properties of different data storage solutions, and the transmission, processing and analytics of data from an enterprise system perspective. Including the platform choices available for designing and implementing solutions for data storage, processing and analytics in different data scenarios;	**PR**	
How relevant data hierarchies or taxonomies are identified and properly documented;	**PR**	
The concepts, tools and techniques for data visualisation, including how this provides a qualitative understanding of the information on which decisions can be based.	**PR**	
Digital Business and Enterprise Systems Architecture Specialist Skills to be assessed	**Methods of Assessment**	
Design and maintain digital systems architectures for online, cloud or mobile platforms. Evaluate alternative architectural solutions, ensuring the architecture is optimal for the business context in terms of deployment, operation and continuous enhancements;	**PR**	
Produce logical and physical architectural designs, mapping architectural principles and constraints onto the architectural solution. Evaluate and recommend products and services from software and solution providers in support of the architecture designs;	**PR**	
Recommend optimal delivery roadmaps and develop system implementation plans for enabling the proposed architecture, maintaining operational stability whilst delivering enterprise architecture-led change initiatives to improve business performance;	**PR**	
Implement architectural design governance frameworks that include risk mitigation strategies associated with the architecture. Define, develop and maintain operating models, technical design principles and enterprise architecture artefact guidelines;	**PR**	
Document architectures and roadmaps that enable the logical and physical system to be defined, to the detail appropriate to the audience and communicate the solutions and their importance and value to stakeholders;	**PR**	
Work with implementation teams to support the delivery of new or improved architectures, managing stakeholder expectations to reconcile conflicting business requirements.	**PR**	
Digital Business and Enterprise Systems Architecture Specialist Knowledge to be assessed	**Methods of Assessment**	

The hardware and software platforms relevant to the business context, and the applications hosted by these;	PR	
The relevant standards, tools, approaches and processes for developing and communicating enterprise architectures, optimising architectural solutions and mitigating risks;	PR	
How to create architecture descriptions and designs, using industry standard tools and techniques to build a coherent representation of an enterprise architecture consisting deployed business services, applications and technology;	PR	
The need for different models, views and representations of enterprise architectures to describe the structure and behaviour of applications, how they interact with each other, the data consumed and produced, and the interactions with business users;	PR	
The relationship between business strategy, business goals, and an enterprise architecture, including the importance of usability, reliability, performance, maintainability, and security in architectural development;	PR	
How to assess enterprise architectures for relevance and review their suitability in supporting the enterprise.		PD
System Test and Assurance Specialist Skills to be assessed	**Methods of Assessment**	
Test Environment: Specify and configure digital system solution test environments to represent the usage context, against which tests can be executed in line with the organisational test strategy;	PR	
Test Planning: Create test plans that specify the digital system solution testing objectives, test deliverables, test schedule, test activity estimates and the required test resources (testers, test software and test hardware) required for digital system solution testing;	PR	
Test Cases: Write clear, intuitive test cases that are used to verify that each element of the digital system solution under test performs as specified. Use industry standard test management tools to define test cases and specify test data;	PR	
Test Execution: Apply appropriate test techniques to execute tests for reach test case using both manual test methods and automated testing tools as appropriate in a commercial environment;	PR	
Test Results: Document, manage and maintain test results and resolutions. Produce defect reports to identify, characterise and prioritise identified defects and aid their resolution. Compile written reports on test activities, outcomes, opportunities and risks, and explain recommendations to stakeholders;	PR	
Test Reviews: Define review and refine test methodologies in line with best practice test strategies and practices. Develop strategies for increased exploitation of reusable automated testing approaches.	PR	
System Test and Assurance Specialist Knowledge to be assessed	**Methods of Assessment**	
The fundamental software testing and assurance concepts and methods; including goals, challenges and limitations of software testing;	PR	
How to create, configure and maintain multi-server test environments;	PR	
How to design test cases effectively with various testing strategies including the need for representative test data;	PR	
How to select and justify appropriate testing techniques for a software testing situation, taking account of their strengths and weaknesses and the software's domain, requirements and development maturity;	PR	
How to implement standard testing and assurance methodologies and procedures for a range of digital solution platforms including front-and back-office enterprise, mobile apps and web based applications. This includes the tools and techniques that can be used for automated testing, how to apply these and their limitations;	PR	
The need to deliver clear test results, defect reports and associated test documentation.		PD
IT Strategy Specialist Skills to be assessed	**Methods of Assessment**	
Assess an organisation's technology operations and their continued capability to deliver the organisations technology based products and services, through defining, delivering, and supporting strategic plans for implementing digital technologies and revising as required;	PR	

Perform strategic analysis of organisational information systems, their structure and current effectiveness, in order to make systems rationalisation, systems integration and other improvement proposals:	PR	
Engage with business units to produce technical solution proposals for different technology domains such as infrastructure, cloud, application and storage platforms aligned with business demand;	PR	
Develop and implement technology lifecycle roadmaps, assessing different technical options and developing technology strategies aligned with business priorities and agreeing the case for change from senior management;	PR	
Plan and manage technology change delivery and migration programmes, ensuring successful implementation of the chosen technology, smooth delivery of related consultancy services to clients and verifying application results using audits;	PR	
Analyse and assess complex digital business problems through collecting and reviewing business data and formulating technology based design solutions.	PR	
IT Strategy Specialist Knowledge to be assessed	**Methods of Assessment**	
The role and nature of IT consultancy as a mechanism for creating business improvements and which typical responsibilities and activities are included;		PD
The contribution of contemporary IT architectures (including cloud deployment) as well as software platforms and applications appropriate to the context of IT consultancy;	PR	
The importance of clearly identifying the client issue, applying a structured approach and selecting appropriate analytical tools and techniques;	PR	
The diversity of IT consultancy interventions and approaches and the importance of scoping interventions effectively and agreeing clear contracts with clients;	PR	
How to apply a range of simple, recognised data gathering, problem solving and analytical tools and techniques to achieve agreed outcomes, presenting and communicating the results of research in reports and presentations to senior stakeholders;	PR	
The importance of client relationship, methods of establishing engagement with the client and the importance of communication, consultation and negotiation in managing clients.	PR	
IT Business Analysis Specialist Skills to be assessed	**Methods of Assessment**	
Lead the gathering of requirements through elicitation, validation, prioritisation and documentation of high level and detailed system requirements, both functional and non-functional, using appropriate documentation and modelling techniques;	PR	
Lead business process workshops for understanding the client business environment and that analyse, develop and document end-to-end business processes and document product definitions, stakeholder needs, product features, and corresponding functional specifications;	PR	
Manage requirements ensuring that there is traceability through the project lifecycle from initiation to final delivery;	PR	
Map requirements with existing functionality and identify gaps that require additional configuration or customisation;	PR	
Drive the prioritisation, documentation and communication of business requirements throughout the project lifecycle, using a variety of recognised techniques and tools;	PR	
Communicate requirements and other business analysis findings to internal and external team stakeholders.	PR	
IT Business Analysis Specialist Knowledge to be assessed	**Methods of Assessment**	
How to analyse and deconstruct project briefs, translating them into detailed functional and technical specifications covering complex scenarios and understanding interdependencies;	PR	
How to deliver system requirements, including the methods and techniques for analysing the business domain and producing business requirements;	PR	
How to manage and document change with the business and communicate to the development team;	PR	
The role, functions and processes of information systems in achieving business objectives;		PD
The analytical and computer based tools, techniques and modelling approaches that are required for the thorough analysis and solution of complex decision problems in a business context, together with the advantages and disadvantages in using them;	PR	

	Methods of Assessment	
The concepts of organisational context, business strategy, stakeholder, business systems and process thinking, and change management for the business requirements analysis.	PR	
Network Engineering Specialist Skills to be assessed	**Methods of Assessment**	
Take responsibility for design, build and deployment activities to deliver appropriate secure network infrastructure solutions to meet customer requirements at an enterprise level and within budget, including enhancements and network configuration updates;	PR	
Formulate detailed network and storage specifications for stable and secure computing operations in a dynamic environment identifying new networking services and capabilities;	PR	
Manage the operation, maintenance and support of secure network environments, including diagnosing and troubleshooting wireless, security, switching, phone and other network-related issues for network related incidents;	PR	
Select and apply network monitoring tools to aid planning network upgrades before they become critical. Make recommendations for improvements to security, scalability, manageability, and performance across a network, storage, and related technologies;	PR	
Produce network technology roadmaps to meet evolving business needs for enterprise computing environments, including common network services, cloud services, web application hosting, databases, high-availability services, security and backup/recovery;	PR	
Ensure network infrastructure solutions chosen fit within the overall enterprise infrastructure architecture, security architecture and security standards.	PR	
Network Engineering Specialist Knowledge to be assessed	**Methods of Assessment**	
How IT networks impact the organisation, business objectives and processes and the application of different approaches to network organisation and management;	PR	
The principles of secure network design, architecture, implementation and assurance, including how to develop and analyse network protocols by using networking simulation;	PR	
How to build and maintain secure networks, including the types of countermeasures that can be put in place to identify, reduce or prevent problems caused by network attacks or misuse;	PR	
How to implement quality of services (QoS) of communication networks in terms of throughput, reliability and delay, and the importance of ensuring that performance, security, availability and continuity standards meet required service levels and business needs;	PR	
Current industry standard network architectures and their individual protocol layers, including the algorithms employed, the OSI (Open Standard Interconnection) model, systematic troubleshooting approaches and how to apply them;	PR	
Network industry trends and technical opportunities, assessing their viability for use within different business scenarios.		PD
IT Operations Management Specialist Skills to be assessed	**Methods of Assessment**	
Take responsibility for the availability, performance and resilience of all business IT systems including core admin and business platforms, web applications and related interfaces and support services and the operational maintenance of servers, storage and other technical back-office elements;	PR	
Design and implement short and long-term strategic plans to ensure the IT infrastructure and services capacity and capability meets existing and future requirements;	PR	
Manage the transition and maintenance of new or updated solutions or other changes into the live operations environments, this includes scheduled installation of software updates, backups and patches to development and production systems;	PR	
Review and develop the organisation's procedures for monitoring and measuring the performance of IT operations and produce and maintain detailed documentation on operational IT systems, processes and procedures;	PR	
Ensure that IT systems are compliant with information governance, regulatory and mandatory requirements and standards including local inventory maintenance and software license management;	PR	
Manage 3rd party IT systems and services and business applications line with the IT strategy, ensuring that their availability and performance meets the firm's current and future requirements including responsibility for IT vendor, contract and outsourcing management.	PR	

IT Operations Management Specialist Knowledge to be assessed	Methods of Assessment	
The principles governing modern approaches to the management of IT enabled operations and the development, management, application and implementation of information systems to support business processes and their impact upon organisations;	PR	
The importance of IT operations within a business for competitiveness and how key aspects of customer service such as quality, cost, delivery and customisation are linked to the type of system adopted;	PR	
The role and function of information technology in supporting operations and supply chain management;		PD
How the design and management of a firm's IT enabled processes interact to determine a firm's cost structure and its ability to compete effectively in terms of non-cost measures such as quality, variety and speed;	PR	
The key issues in the design of IT enabled operations (such as process design and analysis) and in the management of those operations (such as planning, scheduling and optimisation);	PR	
The principles of asset management and support for company IT related hardware and devices.	PR	
IT Project Management Specialist Skills to be assessed	Methods of Assessment	
Take responsibility for the evolution and development of software solutions for web, mobile and fixed platform solutions, leading the scoping, sizing, and estimating efforts for assigned engagements;	PR	
Manage the demand planning, forecasting, budgeting, and supply planning for software solutions development delivery. Identify resources, assign responsibilities and formulate work packages in accordance with organisational standards;	PR	
Manage the work of the software solution development teams to ensure optimal resource utilisation and engagement, ensuring that the evolution and development of software solutions meets the software specification and client's expectations;	PR	
Ensure all delivery aspects of IT solutions adhere to an appropriate software development methodology (including Agile, and Waterfall);	PR	
Manage the solution roadmap, communicating milestones providing status reports and progress updates of solutions to client stakeholders and managing documentation in accordance with the organisation's standards;	PR	
Establish close and trusted relationships with clients, business stakeholders and software solutions teams to deliver the roadmap, governance and supporting processes and successfully negotiate with clients on technical matters, and manage client expectations.	PR	
IT Project Management Specialist Knowledge to be assessed	Methods of Assessment	
The characteristics of IT project management and how it drives change within organisations, through the organisational IT and systems strategy and its links to the business strategy. The importance of delivering business value via IT projects, and how this is achieved;	PR	
How to select appropriate modern software development methods for a variety of software projects, including the processes, methodologies, tools and standards to improve the cost, speed and quality of solution development;	PR	
How to analyse and manage the development processes/stages, quality control, delivery and documentation/communication etc. of large scale software systems;	PR	
How to apply estimation techniques for software solution development activities, and planning/tracking techniques to monitor progress of those activities in software development;	PR	
How to communicate software solution milestones and progress updates with client stakeholders;		PD
How to deliver the roadmap, governance and supporting processes for software solutions.	PR	
Cyber Security Technical Specialist Skills to be assessed	Methods of Assessment	
Plan and carry out a variety of security testing strategies on IT infrastructures (fixed and wireless), middle-ware and applications, to identify new issues and recommend remediation and enhancements to security policies and information technology procedures;	PR	

Perform cyber threat intelligence analysis to research, analyse and evaluate technical threats by reviewing open source and other information from trusted sources for new vulnerabilities, malware, or other threats that have the potential to impact the organisation;	**PR**	
Identify, investigate and correlate actionable security events, including performing network traffic analysis using a range of techniques relevant to the security of communication networks to assess security risks and escalating where appropriate;	**PR**	
Conduct a vulnerability assessment, to identify and report on vulnerability issues and possible solutions arising, including recommending cost-effective mitigations comprising careful combinations of technical, procedural and administrative controls;	**PR**	
Select and apply cyber security forensic tools and techniques for attack reconstruction, including forensic analysis and volatile data collection and analysis;	**PR**	
Conduct analysis of attacker tools providing indicators for enterprise defensive measures including classifying and identifying attack patterns.	**PR**	
Cyber Security Technical Specialist Knowledge to be assessed	**Methods of Assessment**	
The principles of threat intelligence, modelling and assessment. The range of modern attack techniques and how and where to research emerging attack techniques to inform the development of improved security controls, countermeasures and policies and standards;	**PR**	
How to use human factor analysis in the assessment of threats, including the motivations and methods adopted by a wide range of human threat actors;	**PR**	
How to select and apply tools and techniques to carry out a variety of security testing strategies including vulnerability scanning, penetration testing and ethical hacking, recognising that security testing itself cannot guarantee security and only reveal gaps in security provisioning;	**PR**	
The different approaches and design principles that are used to engineer secure systems, focusing on the importance of building in security, privacy and resilience in the initial design;		**PD**
How to develop and implement security event response programmes, security event handling, and operational security activities;	**PR**	
The different types of cyber security controls that can be implemented, the main principles of secure configuration of security components and devices, including firewalls and protective monitoring tools and how to apply them.	**PR**	
IT / Digital Futures Management Specialist Skills to be assessed	**Methods of Assessment**	
Design and develop digital architecture and infrastructure roadmaps, implementation strategies and transformation plans focused on digital workplace transformation;	**PR**	
Develop digital workplace business case proposals that provide return on investment (ROI) and total cost of ownership (TCO) analysis, including preparing reports and delivering presentations to senior management to secure budget;	**PR**	
Conduct digital technology foresight planning to identify and select new digital technology capabilities to optimise the digital workplace. Including cloud computing, social networking, digital collaboration, virtualisation and mobile & tablet computing etc.;	**PR**	
Align digital infrastructure strategy and planning with business goals to create engaging, connected and cost effective digital workplace environments. Develop policies, and guidelines that direct the selection and implementation of digital workplace infrastructure;	**PR**	
Work with solutions architects, providers and systems administrators to provide an enterprise-wide approach to Digital Workplace planning that is resilient, capable, adaptable, scale-able, user-friendly and focussed on meeting business needs;	**PR**	
Ensure that digital workplace infrastructure solutions focus on achieving stable and robust operational service delivery and high availability for end users.	**PR**	
IT / Digital Futures Management Specialist Knowledge to be assessed	**Methods of Assessment**	
How to develop strategies for the management and deployment of new and emerging technologies, tools and techniques which deliver business value within the context of a digital workplace in a fast-changing business environment;	**PR**	
How to review, evaluate, select and test digital product technologies and enhanced digitally enabled business processes which improve business efficiency through the integrated use of data and management information systems;	**PR**	

How to implement digital solutions that improve access to services as they become web-based or web-enabled, which reduce administration costs through the adoption of digital tools and improved communications for stakeholders;	**PR**	
The stages through which digital business services are created from discovery, through to live and how those services can be maintained and managed over time until they are retired;	**PR**	
Conduct technology foresight activities to review changes to the IT landscape to meet current and future business requirements;		**PD**
Undertake financial modelling relevant to the digital workplace context to justify IT infrastructure investment making a sound business case to support future development.	**PR**	

ANNEX B – Grade descriptors- Digital and Technology Solutions Specialist – By Assessment Method

Professional Discussion informed by Portfolio			
Fail	**Pass**	**Merit**	**Distinction**
The apprentice will be deemed to have Failed the Professional discussion if they have not met the pass criteria **The Apprentice:**	The apprentice will be deemed to have Passed the Professional Discussion if they provide evidence to meet all the Knowledge, Skills and Behaviour requirements set out for the Professional Discussion informed by the Portfolio in Annex A and all of the criteria below: **The Apprentice:**	The apprentice will be deemed to have achieved a Merit in the Professional Discussion if they provide evidence to meet all the pass criteria and also all of the additional criteria below: **The Apprentice:**	The apprentice will be deemed to have achieved a Distinction in the Professional Discussion if they provide evidence to meet all of the merit criteria and also all of the additional criteria below: **The Apprentice**

Core Themes aligned to KSBs (See Annex 1 for how the themes link to standard)				
Business and change management	• Has not met the pass criteria	• Develops well-reasoned technology roadmaps and clear plans for their implementation Demonstrates an awareness of how to deliver technology based business change programmes	• Plans and implements technology based business change programmes	• Manages time effectively and with constant attention to detail, contributes positively to the effective working of a team. • Displays a comprehensive and leadership understanding of IT enabled business processes and technology road-mapping • Compares different methods of achieving technology based business change programmes that positively contributes to the effective delivery of workplace transformations
Professional competencies	• Has not met the pass criteria	• Is able to demonstrate negotiation skills and present budget requests.	• Shows confidence and control in negotiations and is able to communicate effectively to agree budgets.	• Is able to confidently and authoritatively negotiate and gain agreement for well-defined and justified budget requests across a range of different contexts.

		- Selects suitable presentation media and delivers presentation. - Can apply problem solving as part of developing solutions - Can select and apply problem solving techniques as an integral part of the solution development process.	Prepares for and confidently delivers presentations adjusting to different audience needs and responding to stakeholder requests.	- Is highly aware of the audience environment and can determine appropriate presentation style and action and articulate recommendations to the audience, maintaining a balanced outline and regulating the pace of the presentation to fit time limits and to deal with questions. - Discusses and provides evidence of problem solving techniques and approaches and how to apply them in a range of conditions.
Leadership	Has not met the pass criteria	- Can identify different leadership styles and motivational techniques to drive high quality technical solutions and outcomes - Correctly identifies professional values that contribute to building high performing teams. - Understands coaching techniques to develop leadership and technical skills in others. - Understands ways to develop good working relationships within own team and between teams.	- Provides clear evaluation of the human factors that contribute to leadership and management of technology in business. - Is able to describe own leadership style, strengths and weaknesses.	- Is highly proactive in their approach to leadership and management, and demonstrates a comprehensive understanding and application of the human factors that contribute to effective leadership and management. - Contributes positively to effective team working, making robust and reliable judgements and explains the reasoning behind judgements made. - Is highly proactive in developing leadership and technical skills in others. - Is highly proactive to ensure excellent working relationships between own and other groups.
Technology Management	Has not met the pass criteria	- Shows evidence of understanding of the business context. - Shows awareness of the factors that enable technology driven change	Understands and can explain the dynamic nature of the business environment and the internal and external factors that contribute to change.	Displays a depth of understanding in technical knowledge and of how managing business change to respond to changing markets can deliver to the company's business strategy.

		and continuous improvement • Understands that aligning new products, processes and services contributes to the company's business strategy	• Can describe how effective technology and change management can provide measurable improvements in business performance. • Can develop and communicate business proposals for the development of new products, processes and services that align with the company's business strategy.	• Shows evidence of proactive technology leadership for managing technology driven change and continuous improvement • Shows evidence of developing compelling business proposals for new products, processes and services that have a justifiable and of measurable contribution with the company's business strategy.
Software Engineering Specialist only	• Has not met the pass criteria	• Demonstrates competence in architecting software platforms.		
Data Analytics Specialist only	• Has not met the pass criteria	• Understands and can explain the information governance and data protection requirements that exist in the UK together with the legal, social and ethical concerns involved.		
Digital Business and Enterprise Systems Architecture Specialist only	• Has not met the pass criteria	• Knows how to assess enterprise architecture architectures for relevance and suitability.		
System Test and Assurance Specialist only	• Has not met the pass criteria	• Understands and can explain the need and how to deliver clear test results, defect reports and associated test information		
IT Strategy Specialist only	• Has not met the pass criteria	• Is aware of the role and nature of IT consultancy as a mechanism for creating business improvements		

IT Business Analysis Specialist only	• Has not met the pass criteria	• Understands and can explain how business objectives are met by information systems		
Network Engineering Specialist only	• Has not met the pass criteria	• Understands and can explain industry trends in Networking and their viability in different business scenarios		
IT Operations Management Specialist	• Has not met the pass criteria	• Understands and can explain the part information technology has in supporting business operations and supply chain management		
IT Project Management Specialist	• Has not met the pass criteria	Understands and can explain the importance of and how to communicate progress updates to stakeholders		
Cyber Security Technical Specialist only	• Has not met the pass criteria	• Understands and can explain the different approaches and design principles used to embed security, privacy and resilience in initial design		
IT/Digital Futures Management Specialist only	• Has not met the pass criteria	• Understands and can explain how to conduct technology foresight activities to review changes to the IT landscape to meet current and future business requirements		

Project Report				
	Fail The apprentice will be deemed to have Failed the Professional Report if they have not met the pass criteria **The Apprentice:**	**Pass** The apprentice will be deemed to have Passed the Professional Report if they provide evidence to meet all the Knowledge, Skills and Behaviour requirements set out for the Professional Report in Annex A and all the criteria below: **The Apprentice:**	**Merit** The apprentice will be deemed to have achieved a Merit in the Professional Report if they have met all of the pass criteria and all of the additional criteria below: **The Apprentice:**	**Distinction** The apprentice will be deemed to have achieved a Distinction in the Professional Report if they meet all of the merit criteria and the additional criteria below: **The Apprentice**
Core Professional competencies	• Has not met the pass criteria	• Demonstrates competence in designing complex IT enabled business processes and in making some recommendations for improvement • Demonstrates practical report writing skills to produce solution reports	• Is able to accomplish complex IT enabled business process design and in making detailed business recommendations aligned and justifiable improvements • Can select appropriate formats to produce digital and technology solution specialism plans and solutions in a well-structured business report	• Is proactive in improving complex IT enabled business processes • Is able to select, discuss and prepare a range of appropriate professionally presented digital and technology solution specialism plans and solutions in a well-structured business report, including clear outcomes, methods in a compelling way with a succinct management summary
	• Has not met the pass criteria	• Can plan and implement digital and technology solutions specialist tasks at a professional level	• Can implement structured problem solving approaches and plan and implement digital and technology solutions specialist tasks at a professional level	• Can demonstrate self-direction and originality in solving problems, using structured approaches and act autonomously in planning and implementing digital and technology solutions specialist tasks at a professional level
	• Has not met the pass criteria	• Can apply negotiating skills to agree outcomes	• Is competent at negotiating and closing techniques for semi complex problems and can deal with senior internal and external stakeholders	• Is competent at selecting and applying negotiating and closing techniques in a range of interactions and

				engagements, both with senior internal and external stakeholders
Specialism aligned to KSBs				
Software Engineering Specialist	• Has not met the pass criteria	• Demonstrates competence in architecting software platforms. • Is aware of contemporary software development approaches and methodologies including DevOps and Cloud Computing. • Can develop and deliver, basic software solutions that deliver most of the specified functionality. • Can update existing software solutions • Can interpret a plan and deliver software solutions on time. • Can test own software and others software to ensure that it is defect free.	• Understands and can explain the features and benefits of a range of alternative software development methodologies and technologies. • Is able to accomplish semi-complex software solutions that deliver all of the required functionality. • Can review existing software and improve the efficiency and functionality. • Can incorporate basic security considerations into software projects, delivering solutions on time and to meet specified level of quality. • Understands and can explain the range of factors that contribute to software quality including source code quality, how testing assures quality, and the importance of quality in design, documentation etc.	• Compares different software methodologies and can select technologies for different contexts of software development. • Can develop and deliver complex software solutions that are scalable and which deliver feature rich user experiences. • Is proactive in code review and refactoring. • Plans and implements security considerations across the software development process. Can plan and deliver complex software projects. • Displays a comprehensive understanding of software quality and can select and implement quality frameworks for software development.
Data Analytics Specialist	• Has not met the pass criteria	• Is able to demonstrate basic data acquisition techniques. • Shows evidence of being able to appreciate the quality aspects of data. • Can develop simple analytical hypotheses for investigation. • Can conduct analysis on data using statistical techniques to help solve business problems.	• Shows confidence in identifying sources of data and in processing complex and large data sets. • Understands and can explain the factors that contribute to data quality and can develop data quality rules. • Prepares for a data analysis by formulating hypotheses. • Confidently delivers semi-complex investigations using analytical programming techniques and statistical	• Is able to confidently and authoritatively identify, select, extract and combine data from across a range of different data sources and contexts. • Is highly aware of the nature of data and the quality issues that can arise from incomplete or dirty data. Can select and apply data cleansing techniques to improve the quality of data.

		- Can select suitable methods to present data and the outcomes of a data study. - Can develop a business report to summarise the outcomes of the data study.	- methods, including an understanding of the application of machine learning. - Can present different data architectures adjusting to different audience needs and using data visualisation techniques.	- Can formulate analysis questions and hypotheses and develop associate algorithms to answer complex problems with statistically sound conclusions; - Can conduct complex analyses of data, selecting and utilising a range of analytical software, statistical modelling & machine learning techniques to come to conclusions and make recommendations. - Can model and visualise complex data and select appropriate methods to present data and results that support human understanding of complex data sets.
Digital Business and Enterprise Systems Architecture Specialist	Has not met the pass criteria	- Understands and can explain the principles of systems architecture and is able to implement these in the design of standard architectural solutions. - Is aware of the different models available for representing system architecture designs and can produce standard logical and physical architectural designs. - Can develop system implementation plans for enabling the proposed architecture. - Is aware of architectural design governance frameworks - Can document and present architectures and roadmaps at a high level.	- Can evaluate different alternative architectural models and select appropriate solutions for the business context - Understands and can explain different models, views and representations of enterprise architectures to describe the structure and behaviour of them, and can produce logical and physical architectural designs, and recommend products and services from software and solution providers in support of the architecture designs. - Can develop system implementation plans and recommend optimal delivery roadmaps. - Understands and can explain the different architectural design governance frameworks and how these can be implemented.	- Can identify optimal architectural solutions for a range of the business context, factoring consideration of both deployment and operation as well as continuous enhancements. - Understands and can explain the models available how they interact with each other, and can select appropriate approaches to represent the data produced and consumed, and the interactions with business users. Can produce optimised logical and physical architectural models and designs, understanding the need for different models, views and representations of enterprise architectures, how they interact with each other, the data consumed and produced, and the interactions with business users.

| | | • Can work with implementation teams to support the delivery of the proposed architecture. | • Can document architectures and roadmaps to communicate the logical and physical system to be developed in both high and low-level detail. | • Can develop alternative approaches and recommend optimal delivery roadmaps and system implementation plans that deliver enterprise architecture-led change initiatives to improve business performance, assessing the different approaches for their suitability in supporting the enterprise
• Is able to compare the different architectural design governance frameworks and align these to the organisational risk mitigation strategies and develop, implement and maintain enterprise architectures and operating models in line with organisational requirements.
• Can document architectures and roadmaps to communicate the logical and physical system to be developed in both high and low-level detail and present these to gain support from senior stakeholders articulating their importance and value to stakeholders. |
| **System Test and Assurance Specialist** | • Has not met the pass criteria | • Is aware of the fundamental software testing and assurance concepts and methods and can specify and configure digital system solution test environments.
• Can create test plans.
• Can design and implement test cases.
• Can execute tests for each test case and is aware of the | • Understands and can explain the different software testing and assurance concepts and methods and how to apply these and can create, configure and maintain multi-server test environments.
• Can create test plans that specify the testing objectives, test deliverables and test schedule.
• Understands and can explain how to develop test cases that are used to | • Understands and can explain the goals, challenges and limitations of software testing and how to review and select options to specify, create, configure and maintain multi-server test environments to best represent the usage context, against which tests can be execute in line with the organisation's test strategy.
• Can create and present comprehensive test plans that specify |

| | | different approaches when using manual or automated test methods.
• Can produce test results and defect reports.
• Can review and refine test methodology and develop reusable automated testing approaches. | verify that each element of the digital system solution under test performs as specified.
• Can apply appropriate test techniques to execute tests for reach test case using both manual and automated test methods as appropriate.
• Can review and report on test outcomes and apply industry standard test management tools to define test cases and specify test data. | the testing objectives, test deliverables, test schedule, as well as providing test activity estimates and specifying the required test resources.
• Can use test results to identify and proactively reduce the likelihood of similar defects in subsequent developments.
• Understands and can explain how to implement testing and assurance methodologies and procedures for a range of digital solution platforms including front-and back-office enterprise, mobile apps and web based applications, including automated testing, where appropriate to execute tests.
• Can review test methodologies in line with best practice and develop strategies for continuously improving test coverage and test effectiveness. This includes making recommendations to development teams for designing out common patterns of test failure that have been identified. |
| **IT Strategy Specialist** | • Has not met the pass criteria | • Can assess an organisation's technology operations to identify areas for improvement.
• Applies a structured approach and can apply analytical tools and techniques to investigate a business scenario.
• Can make recommendations for improvement activities. | • Can assess an organisation's technology operations and their capability to deliver the organisations technology based products and services.
• Selects appropriate analytical tools and techniques and applies a structured approach to investigate a business scenario and make recommendations | • Can assess an organisation's technology operations and their continued capability to deliver the organisations technology based products and services, and can develop plans for implementing digital technologies and revising as required.
• Can select appropriate analytical tools and techniques and applies a |

		• Is aware of different technology domains such as infrastructure, cloud, application and storage platforms aligned with business demand. • Can plan technology change delivery and migration programmes. • Can analyse and assess complex digital business problems via data business data collection and review and formulates technology based designs.	• Can perform analysis of information systems, their structure and current effectiveness, in order to make systems rationalisation, systems integration and other improvement proposals • Can produce technical solution proposals for different technology domains such as infrastructure, cloud, application and storage platforms aligned with business demand • Can plan and implement technology change delivery and migration programmes, ensuring successful implementation of the chosen technology	structured approach to investigate a business scenario and make recommendations • Can perform a strategic analysis of organisational information systems, to review their structure and current effectiveness, in order to make systems rationalisation, systems integration and other improvement proposals and plans • Can analyse and assess complex digital business problems, develop and implement technology lifecycle roadmaps, assessing different technical options and plan and manage technology change delivery and migration programmes, ensuring successful implementation of the chosen technology. • Can produce clear technology recommendations to internal and external clients which bring achievable financial benefits to the organisations.
IT Business Analysis Specialist	Has not met the pass criteria	• Can lead the gathering, validation, prioritisation and documentation of high level and detailed system requirements. • Understands and can explain how to deliver system requirements, including the methods and techniques for analysing the business	• Can lead the gathering of requirements through elicitation, validation, prioritisation and documentation of high level and detailed system requirements, both functional and non-functional, using appropriate documentation and modelling techniques	• Using the information gathered can determine the priority of the data to achieve the most significant business benefits. • Can manage requirements ensuring that there is traceability through the project lifecycle from initiation to final delivery • Can lead business process workshops to assess the client business

		• domain and producing business requirements • Can produce technical specifications for systems understanding interdependencies • How to deliver system requirements, including the methods and techniques for analysing the business domain and producing business requirements • Can map requirements with existing functionality • Can communicate requirements to stakeholders	• Can help facilitate business process workshops for understanding the client system specifications • Can produce system specifications and document these • Can review requirements with existing functionality and identify gaps that require additional configuration or customisation • Can communicate requirements and other business analysis findings to internal and external team stakeholders	• environment and analyse, develop and document system specifications • Can manage and document change with the business and communicate to the development team • Can document and present business requirements throughout the project lifecycle, using a variety of recognised techniques and tools together with the advantages and disadvantages in using them;
Network Engineering Specialist	• Has not met the pass criteria	• Understands and can explain how to build and maintain secure networks and how IT networks can impact business objectives and processes • Can produce network and storage specifications • Understands and can explain how to manage the operation of secure network environments • Can apply network monitoring tools to assess network performance and identify issues and escalate these • Can produce network technology roadmaps to meet evolving business needs to meet evolving	• Can design, build and deploy secure network solutions to meet customer requirements • Can formulate detailed network and storage specifications in terms of throughput, reliability and delay, and ensuring that performance, security, availability and continuity standards meet required service levels and business needs • Can manage the operation, maintenance and support of secure network environments, including diagnosing and troubleshooting network-related issues • Can select and apply network monitoring tools to assess network performance and aid planning network upgrades before they become critical.	• Can take responsibility for the design and implementation of secure network solutions to meet customer requirements at an enterprise level and within budget • Can formulate detailed network and storage solution specifications for stable and secure computing operations in dynamic environments and implement scalable traffic design considerations ensuring that performance, security, availability and continuity standards meet required service levels and business needs • Can manage the operation, maintenance and support of secure network environments, including diagnosing and troubleshooting network-related issues and ensuring

		business needs for enterprise computing environments. • Can ensure network infrastructure solutions chosen are aligned to the enterprise infrastructure architecture, security architecture and security standards	• Can demonstrate how the network technology roadmaps produced represent value for money and offer business benefits.	that performance, security, availability and continuity standards meet required service levels and business needs • Can select and apply network monitoring tools to assess network performance and aid planning network upgrades before they become critical and make recommendations for improvements to security, scalability, manageability, and performance across a network, storage, and related technologies • Can follow network industry trends, assessing their viability for use within different business scenarios.
IT Operations Management Specialist	• Has not met the pass criteria	• Is aware of the principles governing modern approaches to the management of IT enabled operations and the factors related to IT operations and support services • Understands and can explain the importance of IT operations within a business and can implement strategic plans to ensure the IT infrastructure and services capacity and capability meets existing and future requirements • Is aware of the key issues in the design and management of IT enabled operations	• Understands and can explain the principles governing modern approaches to the management of IT enabled operations and the development, management, application and implementation of information systems to support business processes and manage the operation of business IT systems • Understands and can explain the importance of IT operations for competitiveness and how key aspects of customer service such as quality, cost, delivery and customisation are linked to the type of system adopted and can implement strategic plans to ensure the IT infrastructure and services	• Understands and can explain the principles governing modern approaches to the management of IT enabled operations and the development, management, application and implementation of information systems to support business processes and manage the operation of business IT systems to support business processes and their impact on the organisation, taking responsibility for the availability, performance and resilience of all business IT systems and support services and the operational maintenance of servers, storage and other technical back-office elements

		• Can implement procedures for monitoring the performance of IT operations and produce and maintain detailed documentation on operational IT systems, processes and procedures • Is aware of the regulatory and mandatory requirements and standards for IT governance • Can manage 3rd party IT systems and services and business applications in line with the IT strategy, meeting current and future availability and performance requirements.	capacity and capability meets existing and future requirements • Understands and can explain the key issues in the design and management of IT enabled operations and can manage the transition and maintenance of new or updated solutions or other changes into the live operations environments • Can review and implement the organisation's procedures for monitoring and measuring the performance of IT operations and produce and maintain detailed documentation on operational IT systems, processes and procedures • Can assess the compliance of IT systems with information governance, regulatory and mandatory requirements and standards including local inventory maintenance and software license management	• Understands and can explain the importance of IT operations within a business for competitiveness and how key aspects of customer service such as quality, cost, delivery and customisation are linked to the type of system adopted and can design and implement short and long-term strategic plans to ensure the IT infrastructure and services capacity and capability meets existing and future requirements • Understands and can explain the key issues in the design and management of IT enabled operations and can manage the transition and maintenance of new or updated solutions or other changes into the live operations environments, including scheduled installation of software updates, backups and patches to development and production systems • Can develop the organisation's procedures for monitoring and measuring the performance of IT operations and produce and maintain detailed documentation on operational IT systems, processes and procedures • Can ensure that IT systems are compliant with information governance, regulatory and mandatory requirements and standards including local inventory

IT				maintenance and software license management and manage 3rd party IT systems and, ensuring that their availability and performance meets the firm's requirements
IT Project Management Specialist	• Has not met the pass criteria	• Can plan the development of software solutions including scoping, sizing, and estimating the main activities required to complete the project • Can identify the factors associated with demand planning, forecasting, budgeting, and supply planning for software solutions development delivery and produce high level resourcing requirements • Monitor the progress of the software solution development activity against planned deliverables • Understands and can explain the different contemporary software development methodology (including Agile, and Waterfall) and how to apply these • Can identify and communicate project milestones to stakeholders in accordance with the organisation's standards. • Can establish trusted relationships with clients,	• Understands and can explain how IT project management drives change within organisations, the importance of delivering business value via IT projects, and how this is achieved • Can manage the demand planning, forecasting, budgeting, and supply planning for software solutions development delivery and Identify resources, assign responsibilities and formulate work packages in accordance with organisational standards • Can manage the work of the software solution development team to ensure appropriate resources are in place and to deliver the outputs specified to meet client expectations • Can manage the delivery aspects of IT solutions in alignment to relevant software development methodologies (including Agile, and Waterfall) • Can manage the project progress, communicating milestones and providing status reports and progress updates of solutions to client stakeholders	• Understands and can explain how to select appropriate modern software development methods for a variety of software projects, including the processes, methodologies, tools and standards to improve the cost, speed and quality of solution development • Can manage the demand planning, forecasting, budgeting, and supply planning for software solutions development delivery, selecting appropriate software development methods for a variety of software projects and can identify resources, assign responsibilities and formulate work packages in accordance with organisational standards • Can take responsibility for the work of the software solution development teams to ensure optimal resource utilisation and engagement, ensuring that the evolution and development of software solutions meets the software specification and client's expectations • Ensure all delivery aspects of IT solutions adhere to an appropriate

		business stakeholders and software solutions teams to deliver the project, negotiating as necessary on technical matters and managing expectations.		software development methodology (including Agile, and Waterfall) • Can take proactive responsibility for the solution roadmap and project delivery, communicating milestones providing status reports and progress updates of solutions to client stakeholders and managing documentation in accordance with the organisation's standards
Cyber Security Technical Specialist	• Has not met the pass criteria	• Is aware of the principles of cyber security threat intelligence, and the main sources of attack techniques and can identify the main security testing strategies on IT infrastructures to identify new issues and recommend remediation • Can perform basic cyber security threat intelligence analysis by reviewing trusted sources of information to identify the main threats that have the potential to impact the organisation • Can identify security events, including performing fundamental network traffic analysis using the organisation's procedures and investigate and escalate where appropriate • Understands and can explain how to carry out a variety of security testing activities	• Understands and can explain the principles of threat intelligence, modelling and assessment. The range of modern attack techniques, and can plan and carry out the common security testing strategies on IT infrastructures, recommend remediation and enhancements to information technology procedures • Can perform detailed cyber threat security threat intelligence analysis to research, to analyse and evaluate technical threats by reviewing open source and other information from trusted sources for new vulnerabilities, malware, or other threats that have the potential to impact the organisation; Can undertake a variety of security testing activities including vulnerability scanning and penetration testing, to reveal gaps in security provisioning and can recommend cost-effective mitigations	• Understands and can explain the principles of threat intelligence, modelling and assessment and can apply these to real world situations. Can identify modern attack techniques and how and where to research emerging attack techniques to inform the development of improved security controls, countermeasures and policies and standards. Can plan and carry security testing strategies on IT infrastructures, to identify new issues and recommend remediation and enhancements to security policies and information technology procedures • Perform cyber threat intelligence analysis to research, analyse and evaluate technical threats by reviewing open source and other information from trusted sources for new vulnerabilities, malware, or other threats that have the potential to impact the organisation;

		including vulnerability scanning and penetration testing to reveal gaps in security provisioning and can conduct a vulnerability assessment, to identify vulnerability issues • Is aware of the cyber security forensic tools and techniques for attack reconstruction • Understands and can explain how to evaluate new attack tools and their impact to the organisation	• Can apply security forensic analysis for attack reconstruction, for events simple forensic analysis • Can conduct analysis of new attack tools including classifying and identifying attack patterns	• Can select and apply tools and techniques to carry out a variety of security testing activities including vulnerability scanning and penetration testing, to reveal gaps in security provisioning and can identify, investigate and correlate security events, including performing network traffic analysis. Can select and apply appropriate techniques to assess security risks and mitigate these, and escalating where these fall outside area of responsibility. • Can select and apply cyber security forensic tools and techniques for attack reconstruction, undertaking forensic analysis and volatile data collection and analysis • Can identify emerging attack tools and conduct analysis to provide indicators for enterprise defensive measures including classifying and identifying attack patterns
IT / Digital Futures Management Specialist	• Has not met the pass criteria	• Is aware of how to review, evaluate, select and test digital product technologies that contribute toward business improvements. Can design and develop digital architecture and infrastructure roadmaps • Understands and can explain how to develop business case proposals, prepare reports and deliver presentations to senior management	• Understands and can explain how to develop new technology implementation strategies and can review, evaluate, select and test digital product technologies to improve business processes. Can design and develop digital architecture and infrastructure roadmaps, and their implementation strategies • Can develop digital business case proposals with financial return analysis, prepare reports and deliver presentations to senior management	• Can develop strategies for the management and deployment of new and emerging technologies, tools and techniques which deliver business value. Can review, evaluate, select and test digital product technologies and business processes and design and develop digital architecture and infrastructure roadmaps, their implementation strategies and transformation plans focused on digital workplace transformation • Can develop strategies and digital business case proposals that provide return on investment and total cost of

		• Understands how to conduct digital technology foresight activity and can horizon scan to identify new and appropriate digital technologies. • Understands and can explain the stages through which digital business services are created from discovery, through to live and how to align with business goals • Understands and can explain how to develop strategies for the management and deployment of new and emerging technologies, tools and techniques and can work with solutions architects, providers and systems administrators to assist with planning • Understands and can explain that digital workplace infrastructure solutions need to achieve high availability, stable and robust operational service for end users	• Can identify and align digital infrastructure planning with business goals to create effective digital workplace environments • Can contribute to the development of strategies for the management and deployment of new and emerging technologies, tools and techniques. Can work with solutions architects, providers and systems administrators to assist with planning and implementation of enterprise- wide resilient, capable, adaptable, scale-able, user-friendly systems that meet business needs. • Understands and can explain how to implement digital solutions that improve business processes and services, ensuring stable and robust operational service delivery and high availability for end users	ownership analysis, and develop reports and deliver presentations to senior management to secure budget • Can align digital infrastructure strategy and planning with business goals to create effective digital workplace environments and develop policies, and guidelines that direct the selection and implementation of digital workplace infrastructure • Can develop and implement strategies for the management and deployment of new and emerging technologies, tools and techniques which deliver business value within the context of a digital workplace in a fast-changing business environment and work with solutions architects, providers and systems administrators to provide resilient, capable, adaptable, scale-able, user-friendly systems. • Can implement digital solutions that improve business processes and services, reduce administration costs and provide improved communications. Can take responsibility for digital workplace infrastructure solutions that focus on achieving stable and robust operational service delivery and high availability for end users.