Programme specification

(Notes on how to complete this template are provide in Annexe 5)

1. Overview/ factual information

Programme/award title(s)	BSc (Hons) in Digital & Technology Solutions
Teaching Institution	Ada, National College for Digital Skills
Awarding Institution	The Open University (OU)
Date of first OU validation	April 2017
Date of latest OU (re)validation	February 2023
Next revalidation	2027/28
Credit points for the award	360
UCAS Code	N/A
HECoS Code	N/A
LDCS Code (FE Colleges)	Not used
Programme start date and cycle of starts if appropriate.	April 2023
Underpinning QAA subject benchmark(s)	Quality Assurance Agency's (QAA) Subject Benchmarks Statement for Computing 2022 *Subject Benchmark Statement -Computing- March 2022-pdf*
Other external and internal reference points used to inform programme outcomes. For apprenticeships, the standard or framework against which it will be delivered.	IfA&TE*Digital & Technology Solutions Professional – Integrated Degree Occupational Standard, ST0119 https://www.instituteforapprenticeships.org/apprenticeship-standards/digital-and-technology-solutions-professional-integrated-degree-v1-1 Assessment Plan (undated) https://www.instituteforapprenticeships.org/media/1073/digital_and_technology_solutions_professional.pdf *Institute for Apprenticeships & Technical Education
Professional/statutory recognition	ESFA (Education & Skills Funding Agency)

For apprenticeships fully or partially integrated Assessment.	Fully Integrated
Mode(s) of Study (PT, FT, DL, Mix of DL & Face-to-Face) Apprenticeship	Mix of Face to Face* & Work Integrated (on-the-job) Learning (FT Apprenticeship)
Duration of the programme for each mode of study	Three Years
Dual accreditation (if applicable)	N/A
Date of production/revision of this specification	January 2023

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

More detailed information on the learning outcomes, content, and teaching, learning and assessment methods of each module can be found in student module guide(s) and the students handbook.

The accuracy of the information contained in this document is reviewed by the University and may be verified by the Quality Assurance Agency for Higher Education.

2.1 Educational aims and objectives

The BSc (Hons) in Digital & Technology Solutions (DTS) integrates workplace and academic learning and provides the opportunity for apprentices to develop personal and professional competence within their chosen specialism.

The award provides DTS apprentices with a broad-based digital-technology education and an opportunity to develop a critical understanding of the rapidly evolving business field within which apprentices operate.

Successful apprentices will develop an understanding of who they are as a professional, and an ability to reflect on this. They will build an awareness of potential career trajectories and develop the skills and motivation for lifelong learning.

The DTS apprenticeship will capitalise on the wealth of apprenticeship experience within the College and will extend this partnership to include a collaborative relationship between the apprentice and the employer (primarily through a workplace mentor).

Aims

This programme aims to develop individuals who are Digital and Technology specialists, capable of managing and leading projects, operations, people and/or services towards

the achievement of organisational goals, in a responsible and professionally reflexive manner. The programme starts with a relatively broad scope at Level 4 and becomes increasingly specific and specialised at Levels 5 and 6. This enables the apprentice to initially explore the subject area, and effectively provides a 'diagnostic' stage to match their skills and career aspirations to a more specific specialism in preparation for progression.

Specifically, the programme aims to:

- Offer a programme of study that meets the needs and expectations of businesses and organisations and support the career development of Digital and Technology Solutions Professionals.
- Provide flexible and broad access to an incrementally structured learning experience that is designed to encourage and enable a diverse range of learners to work within a range of organisations and businesses.
- Support the development of digital and technology specialist skills that will be valued and supported within work-based contexts, i.e. the development of technology enabled solutions for both internal and external customers, in a range of areas including software, business, and data infrastructure.
- Place the specialist study of digital and technology solutions within a broad contextual framework; provide learners with an understanding of the role played by Digital and Technology Solutions Professionals and how their specific and transferable knowledge and skills are applied in a range of professional contexts.
- Develop a good understanding of the principles, theories and technologies that enable the professional practice of Digital and Technology Solutions Professionals.
- Provide learners with a rich and varied academic experience that is designed to support the integration of theory and practice within the workplace.
- Instil a strong professional work ethic that encourages independence, empathy and a strong awareness of ethical, legal and social issues that pertain to the role of Digital and Technology Solutions.
- Encourage and support self-determination, independence, critical self-reflection and advanced communication skills.
- Develop a high standard of written English, and presentation skills.
- Blend the development of business, computing and technical understanding with a raft of related transferable skills that enable learners to develop their careers and operate successfully as Digital and Technology Solutions Professionals within a range of contexts.

- Provide learners with the ability to implement technology solutions that enable organisations and businesses to develop new products and services and to increase productivity using digital technologies.

2.2 Relationship to other programmes and awards

(Where the award is part of a hierarchy of awards/programmes, this section describes the articulation between them, opportunities for progression upon completion of the programme, and arrangements for bridging modules or induction)

n/a

2.3 For Foundation Degrees, please list where the 60 credit work-related learning takes place. For apprenticeships an articulation of how the work based learning and academic content are organised with the award.

Academic content and work-integrated learning are fused throughout the degree and all modules will contribute to the assessment of requisite knowledge, skills and behaviours for the award of Apprenticeship Certificate: Digital & Technology Solutions. Attainment of the final apprenticeship award requires apprentices to successfully complete all formative assessments throughout their BSc (Hons) in Digital & Technology Solutions, with methods and outcomes across the three years ensuring achievement of the apprenticeship standard.

Apprentices will, specifically, complete work-integrated learning activities throughout levels 4, 5 and 6, which will support preparation and presentation of apprentices' portfolio of evidence in line with an individual learning plan (ILP), to be assessed as part of the synoptic End-Point Assessment (EPA).

In the final level of study, apprentices will complete a work-based project, which is a substantial piece of work combining knowledge and understanding alongside work-based development and practice. Apprentices will be required to design and undertake individual research, enterprise and entrepreneurialism, as well as explore collaborative practice and outcomes, implementing their learning immediately within their workplace.

<u>Work-based Portfolio</u>
To successfully complete an apprenticeship, the learners need to demonstrate both knowledge and behaviours and have the skills of applying that knowledge in the workplace that is demonstrated with work based 'evidence'. The portfolio will consist of discrete pieces of work that will collectively cover the full Level 6 DTS Apprenticeship Standard.

In the portfolio, apprentices present evidence from real-work projects, illustrating the application of all the knowledge, skills and behaviours set out in the standard. The portfolio is not evidence that the learning has taken place, but is evidence that the

apprentice has applied that learning in a holistic and coherent way. A professional discussion on portfolio to show the apprentice's competency is assessed as part of the end-point assessment.

Synoptic Work-based Project

The Synoptic work-based project is a part of the degree, which contributes to the final mark (i.e. classification) of the degree. The project must bring together elements of learning from different parts of the programme and show evidence of accumulated knowledge and understanding of management, and the application of these within their organisation. The project must meet the standard and demonstrate the approach taken to the planning and completion of the project.

Because of the significance of the project, the employer and college must work together with the apprentice to agree a project that is achievable within the employer's business constraints whilst meeting the needs of the Standard. The project should be conducted as part of the apprentice's normal work. The employer should make allowances, in terms of time and resource, for the project to be undertaken.
The work-based project is assessed as part of the end-point assessment.

2.4 List of all exit awards
Level 4: Cert (HE) Digital & Technology Solutions Level 5: Dip (HE) Digital & Technology Solutions Level 6 : BSc Digital and Technology Solutions (300 credits) ordinary degree

3. Programme structure and learning outcomes

(The structure for any part-time delivery should be presented separately in this section.)

Programme Structure - LEVEL 4					
Compulsory modules	**Credit points**	**Optional modules**	**Credit points**	**Is the module compensatable ?**	**Semester runs in**
System Development Life Cycle (SDLC) & Project Management Computer Programming Database Systems Cloud Computing Work-based Portfolio	30 30 30 30 0	None		No	Please see below table

Mode of Study		When	How long (No. days)	What (Module)
Ada Attendance	Launchpad	Weeks 1	5	SDLC (Part I)
		Weeks 2, 3, and 4	15	Computer Programming
		Week 5	5	SDLC (Part II)
Six weeks of Work placement		0.5 a day a week *	3	Self-Study
Ada Attendance		Week 6	5	Database Systems
Six weeks of Work placement		0.5 a day a week *	3	Self-Study
Ada Attendance		Week 7	5	Database Systems
Six weeks of Work placement		0.5 a day a week *	3	Self-Study

Ada Attendance	Week 8	5	Cloud Computing
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 9	5	Cloud Computing
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 10	5	Portfolio
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
	Total	68	

* Learners have pre-work and assignments to complete during their time at work which equates to 0.5 days a week.

Intended learning outcomes at Level 4

On successful completion of Level 4, the students should be able to:

Learning Outcomes – LEVEL 4	
3A. Knowledge and understanding	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
A1 Demonstrate a good knowledge of the system development life cycle, the role of project management and team-working in developing computing and information systems solutions to problems faced by organisations and individual users.	Knowledge and understanding are developed through a combination of methods, including: lectures, and self-directed study using resources and virtual learning environment (VLE). Learning will be applied to the organisational context and apprentices will be supported by a workplace mentor, in addition to regular formative feedback module tutors. The assessment strategy for each module is detailed in the module specification and indicates the nature of the assessment. Apprentices will

Learning Outcomes – LEVEL 4	
3A. Knowledge and understanding	
A2 Identify organisational information requirements and model, then manage data solutions, including industry-standard database management systems; being cognisant of the key concepts of data quality and data security. **A3** Explain a current set of techniques and tools for the specification of requirements, analysis, design, implementation and testing of software systems. **A4** Explain the fundamental concepts of the cloud infrastructure and demonstrate knowledge of security issues in cloud environments	receive additional information and support from assessment briefs given by tutors. All module outcomes are assessed. A range of appropriate assessment methods are utilised throughout, with a significant focus placed upon appropriateness to the sector within which the apprenticeship is located.

3B. Cognitive skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
B1 Apply programming principles and constructs to implement solutions to small scale problems. **B2** Analyse, design, build and test a software solution and identify security issues that affect the solutions.	Cognitive skills will also draw on a range of learning and teaching methods appropriate to the demands of the module. These include: Lectures, formative peer-to-peer and tutor feedback and reflective practice relating to the Project Management project. The intellectual and cognitive skills will be acquired through directed reading, supported by focused questioning and critical discussion, project and assignment work relating theory to practise. Tutorial support and

3B. Cognitive skills	
B3 Identify, simple problem-solving and modelling skills appropriate to developing small scale technology solutions for business. **B4** Effectively and securely manage, store, analyse and distribute data.	formative assessment provide the opportunity for guidance in the development of these skills. Skills will be assessed through written and oral evaluations of work. Learning will be applied to the organisational context and apprentices will be supported by a workplace mentor, in addition to regular review of work-based learning and assessment by their College tutor.

3C. Practical and professional skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
C1 Apply sound programming principles to the construction and maintenance of software using appropriate programming paradigms and languages. **C2** Design, optimise and implement a database system, given a set of business requirements found in a textual requirements specification document. **C3** Critically analyse a business domain/organisation in order to identify the role of information systems, highlight issues and identify business opportunities/requirements for improvement.	Practical and professional skills will be developed through workshops, lectures, presentations, formative feedback during tutorials and work integrated projects. Apprentices will also study independently, including critical evaluation of current practice. Close links will be made to the workplace context of each apprentice, with input from workplace contacts supporting tripartite contextualization of specific tasks identified within individual modules. It is anticipated that apprentices off the job and work integrated learning will also play a significant role in the development of practical and professional skills. Assessment methods will be appropriate to the particular module but include tutor assessment of observed activities and written work. All

3C. Practical and professional skills	
C4 Evaluate a range of options in order to design and develop the appropriate digital technology solution to meet the needs of users and the business through IT Project Management.	practical work is linked to a method for evaluating the work and demonstrating understanding of the underlying theories.

3D. Key/transferable skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
D1 Communicates effectively to different audiences using different formats. **D2** Manage the time and resources and appreciate the role of teamwork within the IT discipline. **D3** Give and receive feedback constructively and incorporate it into their own development and life-long learning. **D4** Reflect systematically on their solution and their own performance to further develop learning.	Key/transferable skills will be developed throughout the modules as content is related to the real-world context of each apprentice. Apprentices are also encouraged to take ideas back into their work environment from the course and implement them through their practice. Key/transferable skills are developed in the core modules which extend and enhance previously developed written skills, time management, reading, communication across a range of contexts, information retrieval and research skills. Specific models of practice used within individual workplaces will also be integrated into the working methods considered. The teaching methods include: lectures, workshops, formative feedback on written work and presentations. Apprentices are able to access, on demand or through referral, additional learning support for communication skills with the academic skills support available.

Cert (HE) Digital & Technology Solutions

Programme Structure - LEVEL 5					
Compulsory modules	**Credit points**	**Optional modules**	**Credit points**	**Is the module compensatable?**	**Semester runs in**
Experience Design Digital Technology Project Portfolio	30 30 0	Advanced Programming & Algorithmic Design (SW)* Applied Artificial Intelligence (SW) Data Analytics with Python (DA) Data Visualisation & Statistics (DA) Entrepreneurship & Innovation (TC) Business Risk Analysis (TC) Cyber Security in Society (CS) Cyber Security Analytics (CS)	30 30 30 30 30 30 30 30	No	

**SW : Software Engineer Pathway*
DA : Data Analyst Pathway
TC : Tech Consultant Pathway
CS : Cyber Security Analyst Pathway

Level 5			
Mode of Study	When	How long (No. days)	What (Module)
Ada Attendance	Weeks 1	5	Experience Design
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 2	5	User Experience
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 3	5	Pathway Moule 1
Six weeks of Work placement	0.5 a day a week *	3	Self-Study

Ada Attendance	Week 4	5	Pathway Module 1
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 5	5	Pathway Module 2
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 6	5	Pathway Module 2
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 7	5	Digital Technology Project
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 8	5	Digital Technology Project
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 9	5	Portfolio
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 10	5	Preparation for the final year project (Research Methods)
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
	TOTAL	80	

Intended learning outcomes at Level 5 are listed below:

SW : Software Engineer Pathway
DA : Data Analyst Pathway
TC : Tech Consultant Pathway
CS : Cyber Security Analyst Pathway

Learning Outcomes – LEVEL 5	
3A. Knowledge and understanding	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
A5 Explain what the user-centred design cycle is and how to practise this approach to design interactive systems. **A6** Model the interaction of users with technology as a basis for designing products and services to meet their needs. **A7** Develop a critical understanding of the application of digital technologies within a project context	Knowledge and understanding will be developed through a combination of methods, including: lectures, and self directed study using resources and the virtual learning environment. Learning will be applied to the organisational context and apprentices will be supported by a workplace mentor, in addition to regular formative feedback and summative review of work-integrated learning and assessment by their course and module tutors.

Learning Outcomes – LEVEL 5	
3A. Knowledge and understanding	
A8 Demonstrate competency in object-oriented design and algorithmic approaches to solve medium-scale problems. (SW) **A9** Identify the strengths and weaknesses of selected statistical/data analytics software and selected programming languages and their use to extend capabilities for data analysis and visualisation. (DA) **A10** Identify the various roles, functions and activities related to technology solutions within a business or organisation, with an intimate knowledge of how business exploits technology solutions for competitive advantage. (TC) **A11** Discuss the security, legal and ethical dimensions of digital and technology solutions. (CS)	The assessment strategy for each module is detailed in the module specification and indicates the nature of both formative and summative assessment. Apprentices will receive additional information and support from assessment briefs given by tutors. All module outcomes are assessed. A range of appropriate assessment methods will be utilised throughout with a significant focus placed upon appropriateness to the sector within which the apprenticeship is located.

3B. Cognitive skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
B5 Demonstrate advanced technical knowledge associated with digital and technology solutions.	Cognitive skills will also draw on a range of learning and teaching methods appropriate to the demands of the module. These include: Lectures, formative peer-to-peer and tutor feedback and reflective practice relating to different tasks.

3B. Cognitive skills	
B6 Discuss the underlying concepts and principles associated with Human Computer Interaction methods and techniques and be able to use these to identify issues of communication between computers and people. **B7** Apply design-thinking processes and user-centred evaluation methods to meet design requirements. **B8** Apply entrepreneurial design principles to organise and communicate a project. **B9** Select appropriate machine learning algorithms to provide systematic data analytics solutions to a reasonable range of problems. (SW) **B10** Demonstrate modelling skills appropriate to the analysis of business data. (DA) **B11** Analyse business intelligence and develop strategy for managing technical solutions to business problems. (TC)	The intellectual and cognitive skills will be acquired through directed reading, supported by focused questioning and critical discussion, project and assignment work relating theory to practise. Tutorial support and formative assessment provide the opportunity for guidance in the development of these skills. Skills will be assessed through written and oral evaluations of work. Learning will be applied to the organisational context and apprentices will be supported by a workplace mentor, in addition to regular review of work-based learning and assessment by their College tutor.

3B. Cognitive skills	
B12 Identify the wider context of cyber security, the tools and techniques used and the role of policies, plans and processes in minimising the impact of security threats.(CS)	

3C. Practical and professional skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
C5 Evaluate a range of options and applications of digital technologies within a project context in order to design and develop solutions to meet the needs of users and the business. **C6** Apply evaluation and usability testing methods to interactive products to validate design decisions using user testing and heuristic evaluation. **C7** Devise, develop and produce a project that applies and extends your knowledge, understanding and competencies, reflecting critically on the processes involved, as well as outcomes of your work.	Practical and professional skills will be developed through workshops, lectures, presentations, formative feedback during tutorials and work integrated projects. Apprentices will also study independently, including critical evaluation of current practice. Close links will be made to the workplace context of each apprentice, with input from workplace contacts supporting tripartite contextualization of specific projects identified within individual modules. It is anticipated that apprentices off the job and work integrated learning will also play a significant role in the development of practical and professional skills. Assessment methods will be appropriate to the particular module but include tutor assessment of observed activities and written work. All practical work is linked to a method for evaluating the work and demonstrating understanding of the underlying theories.

3C. Practical and professional skills	
C8 Select and deploy appropriate theory, practices and tools for the specification, design, implementation and evaluation of application software and computer-based systems to meet given requirements under practical constraints.(SW) **C9** Employ state-of-the-art tools to build useful visualisations for different types of data sets and application scenarios. (DA) **C10** Evaluate the key concepts underpinning innovation and the issues associated with developing and sustaining innovation within organisations. (TC) **C11** Undertake cyber security risk assessments for simple IT systems, before evaluating threats and proposing/implementing resolution advice. (CS)	

3D. Key/transferable skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
D5 Demonstrate and exercise independence of mind and thought and appreciate the professional and ethical issues surrounding the development and use of IT applications. **D6** Conduct appropriate research, utilising a small range of primary and secondary sources; for digital technology-based projects. **D7** Develop self-management skills to manage one's own time, meet deadlines and work with others. **D8** Take responsibility for the planning, managing and recording of one's own continuing learning and development. **D9** Evaluate and analyse your own learning experience.	Key/transferable skills will be developed throughout the modules as content is related to the real-world context of each apprentice. Apprentices are also encouraged to take ideas back into their work environment from the course and implement them through their practice. Key/transferable skills are developed in the core modules which extend and enhance previously developed written skills, time management, reading, communication across a range of contexts, information retrieval and research skills. Specific models of practice used within individual workplaces will also be integrated into the working methods considered. The teaching methods include: lectures, workshops, formative feedback on written work and presentations. Apprentices are able to access, on demand or through referral, additional learning support for communication skills with the academic skills support available.

Dip (HE) Digital & Technology Solutions

Programme Structure - LEVEL 6					
Compulsory modules	**Credit points**	**Optional modules**	**Credit points**	**Is the module compensatable?**	**Semester runs in**
Project Dissertation	40	Enterprise Software Engineering (SW)	30	No	
		Software Quality Assurance (SW)	30		
Digital Leadership	20	Machine Learning (DA)	30		
		Big Data Analytics (DA)	30		
Work-based Portfolio	0	Emerging Technologies in Business (TC)	30		
		Technology Entrepreneurship in Practice (TC)	30		
		Cyber Security Management (CS)	30		
		Cyber Security Penetration Testing (CS)	30		

Level 6			
Mode of Study	When	How long (No. days)	What (Module)
Ada Attendance	Weeks 1	5	Pathway Module 1
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 2	5	Pathway Module 1
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 3	5	Pathway Module 2
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 4	5	Pathway Module 2
Six weeks of Work placement	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 5	5	Digital Leadership
Six weeks of Work placement / Work on project	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 6	5	Digital Leadership

Six weeks of Work placement/Work on project	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 7	5	Project Dissertation
Six weeks of Work placement/Work on project	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 8	5	Project Dissertation
Six weeks of Work placement/ Work on project	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 9	5	Project Dissertation
Six weeks of Work placement/ Work on project	0.5 a day a week *	3	Self-Study
Ada Attendance	Week 10	5	Project Dissertation
Six weeks of Work placement/ Work on project	0.5 a day a week *	3	Self-Study
	TOTAL	80	

Intended learning outcomes at Level 6 are listed below:

Learning Outcomes – LEVEL 6	
3A. Knowledge and understanding	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
A12 Demonstrates critical analysis and logical reasoning to the theoretical, conceptual and practical issues central to developing technology solutions. **A13** Evaluate and implement information from primary and secondary sources to solve complex technology problems in the workplace using appropriate theory.	Knowledge and understanding will be developed through a combination of methods, including: lectures and self directed study using resources and the virtual learning environment. An increased focus on criticality will be developed throughout the level programme.

Learning Outcomes – LEVEL 6	
3A. Knowledge and understanding	
A14 Discuss both the personal and broad ethical, sustainable and responsible implications of a project through project proposal documentation. **A15** Describe and analyse the role of leadership in contemporary technology-based organisations. **A16** Apply and describe detailed knowledge in quality management, assurance, and quality standard to software systems. (SW) **A17** Select and apply suitable statistical measures and analysis techniques for data of various structure and content and present summary statistics. (DA) **A18** Describe and explain the integrated use of cutting-edge technology components to support business processes. (TC) **A19** Identify, evaluate and implement the interdisciplinary knowledge of information sciences in a security context to recognize, and manage cyber risks. (CS)	Learning will be applied to the organisational context and apprentices will be supported by a workplace mentor, in addition to regular formative feedback and summative review of work-integrated learning and assessment by their module tutors. A range of appropriate assessment methods will be used throughout with a significant focus placed upon appropriateness to the sector within which the apprenticeship is located. Where practicable, live briefs will be negotiated through tripartite agreement between workplace, apprentice and module tutor, and these opportunities are identified throughout the module specifications for the course.

3B. Cognitive skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
B13 Identify and evaluate the professional skills appropriate to the individual's workplace/placement setting. **B14** Reflect on and demonstrate learning undertaken in the workplace. **B15** Develop innovative solutions derived from effective research, critical assessment of the technologies available and a detailed assessment of the context or complex problem. **B16** Evaluate the significance of leadership in the effective implementation and management of technology enabled business processes. **B17** Select appropriate tools to collect design quality metrics, to analyse the quality of a software development project, and make recommendations based on the results. (SW) **B18** Evaluate and implement efficient data pipelines to extract and transform data from a variety of sources. (DA)	Cognitive skills will also draw on a range of learning and teaching methods appropriate to the demands of the module. These include: Lectures, seminars, formative peer-to-peer and tutor feedback and reflective practice relating to the Synoptic project. The intellectual and cognitive skills will be acquired through directed reading, supported by focused questioning and critical discussion, project and assignment work relating theory to practise. Tutorial support and formative assessment provide the opportunity for guidance in the development of these skills. Skills will be assessed through written and oral evaluations of work. Learning will be applied to the organisational context and apprentices will be supported by a workplace mentor, in addition to regular review of work-based learning and assessment by their College skills coach.

3B. Cognitive skills	
B19 Recognise the challenges, motivations and benefits associated with implementing an innovation or new product within the business. (TC) **B20** Develop policies and procedures to manage enterprise security risks. (CS)	

3C. Practical and professional skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
C12 Employ the research skills needed to investigate a defined topic under supervision, through an extended individual project. **C13** Evaluate a range of options in order to design and develop the appropriate digital technology solution to meet the needs of users and the business. **C14** Apply integrated techniques of digital leadership to different business situations to improve strategic business effectiveness and competitive ability.	Practical and professional skills will be developed through workshops, lectures, presentations, formative feedback during tutorials and work integrated projects. Apprentices will also study independently, including critical evaluation of current practice. Close links will be made to the workplace context of each apprentice, with input from workplace contacts supporting tripartite contextualization of specific projects identified within individual modules. It is anticipated that apprentices off the job and work integrated learning will also play a significant role in the development of practical and professional skills. Assessment methods will be appropriate to the particular module but include tutor assessment of observed activities and written work. All

3C. Practical and professional skills	
C15 Analyse, design, build and test effective software solutions and applications, adopting a software engineering approach, to varied digital technology problem domains, using and presenting relevant research, information and data.(SW) **C16** Employ advanced statistical analytical skills to test assumptions, and to generate and present new information and insights from large datasets. (DA) **C17** Apply logical reasoning to the theoretical, conceptual and practical issues central to recommending technology solutions for business. (TC) **C18** Apply appropriate control measures to minimise risks of security breaches in a range of network environments and data storage systems, drawing on industry practice. (CS)	practical work is linked to a method for evaluating the work and demonstrating understanding of the underlying theories.

3D. Key/transferable skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
D10 Demonstrate flexible, reflective and effective self-management abilities; planning, monitoring, and implementing appropriate study skills for lifelong learning **D11** Fluently communicate written information, arguments, ideas and problems; clearly articulating complex issues for a range of audiences, which could include workplace colleagues and other business environments **D12** Evidence engagement as part of a team in business environments; actively listening, respecting difference and communicating effectively; from within digital enterprise media/ communication tools and in both face-to-face and group situations. **D13** Autonomously manages a project with respect to time and task management; and makes decisions independently with respect to the needs and limitations of a project. **D14** Develop own leadership style and professional values that contributes to building high performing teams.	

See Annexe 3 for a Diagrammatic Demonstration of the Programme

4. Distinctive features of the programme structure

- **Where applicable, this section provides details on distinctive features such as:**
  - where in the structure above a professional/placement year fits in and how it may affect progression
  - any restrictions regarding the availability of elective modules
  - where in the programme structure students must make a choice of pathway/route
- **Additional considerations for apprenticeships:**
  - how the delivery of the academic award fits in with the wider apprenticeship
  - the integration of the 'on the job' and 'off the job' training
  - how the academic award fits within the assessment of the apprenticeship

The programme is designed specifically for current or aspiring practitioners in the IT-related areas covered by the Apprenticeship Standard for Digital Technology and Solutions (DTS). Against that context, the programme is then designed for professionals who provide technology enabled solutions to internal and/or external customers, in a range of areas including software, IT consultancy, cyber security and data analysis.

The programme is designed for employers and their employees (the students) providing the opportunity to combine academic study with professional practice in the digital technology sector. This combination of academic learning at degree level with on the job practical training provides a holistic programme of education enabling students to become confident, competent and capable IT professionals.

The Programme Learning Outcomes, are based upon the requirements of the relevant Standard for DTS, which specifies the skills, knowledge and behaviours that the apprentice should acquire across the Degree programme, including the associated learning, development and application in the workplace.

Academic content and work integrated learning are fused throughout the degree, and modules will contribute to the assessment of requisite knowledge, skills and behaviours for the award of Apprenticeship in DTS. Attainment of the apprenticeship requires apprentices to successfully complete several assessments throughout their BSc (Hons) in DTS, with methods and outcomes across the 3 years ensuring achievement of the apprenticeship standard.

The programme has three levels (level 4 to level 6), each equivalent to a normal academic year. There is an expectation that an apprentice will spend 20% of their time undertaking off-the-job training. This is broadly equivalent to ten weeks per year for the duration of the programme (36 calendar months). The format and schedule to support the delivery and supervision of all modules has then been established with this principle in mind.

This pattern of study is designed to fit within a full time apprenticeship and uses a blended learning approach, which mixes work-based study and attendance at college study weeks. This approach allows students to be both productive employees, learning relevant skills on the job, and participants in a learning community of students who are broadening and deepening their professional knowledge together.

A key distinctive feature of the programme is the provision of specialist routes. Across the programme at levels 5 and 6, apprentices have the opportunity to choose a specialist pathway, allowing them to focus specifically on the unique characteristics of their role having built a broader foundation of knowledge throughout the level 4 modules. The specialist pathway is confirmed at the end of Level 4 (end of year 1) though it may be chosen in advance of that. This gives apprentices and employers ample opportunity to consider the apprentices strengths and interests alongside the business needs before a pathway is locked in, while still allowing two years to develop specialist technical skills to the required level. We anticipate that in many cases the employers and apprentices will have a pathway in mind from the start of the programme, with apprentices hired to roles that align to that specialism.

With four pathways, Software Engineer, Data Analyst, IT Consultant and Cyber Security analyst , as well as flexibility to incorporate work-based projects, the programme develops the skills and knowledge required for a wide range of computing-related career paths. Each pathway is defined in terms of core outcomes that are common to all pathways and a set of knowledge and skills specific to that pathway.

This approach affords clear pathways to provide the commencement of detailed knowledge, skills and behaviours to be gained in the specific rigours of each specialist role. Apprentices will equally reflect on how each pathway influences their day to day activities at work; including details such as quality, time management, economic goals and risk factors.

A core part of this degree is the requirement for apprentices to develop an e-portfolio. This portfolio will provide a record of the specific skills and knowledge they have developed and used in the workplace and provide an opportunity to reflect on their personal development. Given the pace of change in technology, it is critical that learners completing this degree are self-aware and self-managed with respect to their own professional development, and that they are reflective practitioners.

In the final level, apprentices will complete a work-integrated project, which is a substantial piece of work combining knowledge and understanding alongside work-based development and practice. Apprentices will be required to design and undertake individual research and implement recommendations within their workplace.

All apprentices must undertake an independent end-point assessment (EPA), which is a synoptic assessment of the knowledge, skills and behaviours that have been learnt throughout the apprenticeship. The purpose of the assessment is to make sure the apprentice meets the standard set by employers and is fully competent in the occupation. It is taken by apprentices at the very end of the on-programme phase of training. The

portfolio and project that are completed as part of the degree are also used in the EPA process.

The curriculum is based around the apprenticeship work-based learning framework, utilising a combination of: core subject modules, designed to give a platform for the development of technical and generic skills (50% of the programme) , specialised modules relevant for the named pathway (33% of the programme); and modules created as vehicles to motivate the personal and professional development of the apprentice, through completion of work-based portfolio and projects and the Synoptic Project including the integrated End Point Assessment in Level 6 (17%).

All modules are appropriately designated with variation in the relative proportions of SLTA (Scheduled Learning and Teaching Activities), GIS (Guided Independent Study) and, of course, WBL (work-based learning) that aggregate to afford the 'notional learning hours' for a particular module.

Each module is a self-contained block of learning with defined aims, learning outcomes and assessment. A standard module is worth 30 credits. It equates to the learning activity expected from one fourth of a full-time year. The first five weeks of the programme at level 4 is delivered as a "Launchpad" at the college. The Launchpad will provide an opportunity for students to consolidate their learning, receive academic tutorial support, allow revision time and introduce the next module in the schedule.

In addition to the WBL, SLTA and GIS, apprentices will be further supported by online materials and interactions with their skills coaches for the duration of the programme. Within the Synoptic Project, the apprentice will undertake a significant work-based project under the guidance of an academic supervisor from Ada. Because of the significance of the project the employer and the college should work together with the apprentice to agree on a project that is achievable within the employer's business constraints and that meets the requirements of the standard.

The project should be conducted as part of the apprentice's normal work. Employers should make suitable allowance for the project to be undertaken, both in terms of time and resources. However, there are some elements such as the writing of the report, particularly in its reflective aspects that may be undertaken outside of normal work. This should be agreed between the apprentice, employer and the College such that apprentices are not disadvantaged in any way from performing their job and meeting the requirements of the project. Any issues with confidentiality and/or security will also be addressed between the college, employer and apprentice allowing for projects of business value to be undertaken using real data.

5. Support for students and their learning.
(For apprenticeships this should include details of how student learning is supported in the work place)

Digital and Technology Solutions apprentices will benefit from considerable support from the College and their employer. Personalised apprentice support , with opportunities for apprentice-staff contact, is recognised as a key factor in apprentice motivation, involvement and achievement. Given the non-traditional nature of degree apprenticeships, a focused induction programme is planned in order to ensure that apprentices understand the importance of accessing support, are aware of what is available and how to access it.

The student support and guidance are evaluated through:

I. Virtual Learning Environment (VLE)

The programme provides a Virtual Learning Environment (VLE) to support teaching and learning. Google Classroom is the name of the VLE that has been adopted by the College. Google Classroom was launched by Google for Education in August 2014 as an alternative to other VLE's, such as Blackboard and Moodle, and is a platform which allows teaching staff to create and upload online learning resources, and set, collect and grade student assignments. Teaching staff also utilise existing Google applications, such as Gmail and Google Drive to facilitate the creation of documents and communication with students. They will also be able to provide links for students directly from Google Classroom to other College resources.

II. Technical Skills Coaches (TSC)

Ada will appoint a Technical Skills Coach (TSC) for each apprentice who will support them throughout their study and meet regularly with their employer. The skills coaching system provides every student with a dedicated TSC who assists them with their progress on each aspect of the programme and who is concerned for their general welfare. At the beginning of the programme, each student will be allocated a skills coach to act as their adviser throughout their studies; the skills coach is responsible for facilitating a student's overall development. All learners will meet at least every twelve weeks with the student and employer to evaluate and support progress and to further encourage their academic and professional development. If the learner is struggling in any facet of the programme or is a welfare concern the skills coach will meet them more frequently, such as weekly, until they are back on track. Meetings may be face-to-face or remote and the skills coach will keep a record of what is discussed using the OneFile ePortfolio system.

On one hand, the pastoral side of the role can often be simply a friendly conversation at the start of each meeting. On the other hand, the academic/developmental aspect of the role offers the chance for students to discuss their development towards EPA and beyond their formal studies. These meetings can be used by students to sound out their thoughts, ideas and concerns with an experienced professional, who can guide them in the right direction personally, professionally and academically.

The intention behind the Skills Coaching Strategy is that all students:

- are given the opportunity to reflect on their learning and academic progress and to discuss and formulate appropriate strategies to fulfil their potential during their studies at the College;
- are equipped with a lifelong approach to learning enabling continuing personal and intellectual growth;
- are provided with pastoral support which is tailored to their needs, enabling them to take full advantage of their time at the college to develop and maintain a healthy and happy outlook on life;
- develop an awareness of the need for professional and career development and receive guidance on the planning and recording of skills development throughout their studies in order to realise their career aspirations;
- experience the benefits of working with peers and academic tutors within a supportive atmosphere

<u>Technical Skills Coach Activities :</u>

a) Quarterly Reviews and One-to-One Support Meetings

Skills Coaches lead a formal review of the apprentice's progress with both the apprentice and the employer on a 12-weekly basis. Progress on each aspect of the apprentice's programme is considered with a particular focus on the Knowledge, Skills and Behaviours (KSB) of the DTSP standard. Targets are negotiated to encourage the development of the KSBs both at work and while engaging in their academic activity. Employers are encouraged to support this fully and match potential work projects with the needs of the apprentice to help develop them and their work-based portfolios.

During the review, the Skills Coach also addresses Well-being and Learner Support where a range of referrals can be discussed if needed including to the Ada counsellor if required. Safeguarding concerns are reported to the Safeguarding Lead via the college CPOMS portal and/or directly according to severity. This is the same process for PREVENT, British Values and EDI discussions and concerns. The TSC team has been provided with Mental Health Awareness training to help them to identify potential well-being issues.

One-to-one support meetings are facilitated on the basis of need. An interim check in is arranged between each review but the frequency of this can change to monthly, fortnightly, weekly or daily if circumstances require this. General notes regarding the check ins are stored on OneFile and shared as appropriate. Student concerns which require confidentiality are uploaded on to CPOMS as it is not accessible by employers and you can limit access to it. Additional tuition on specific subjects can be facilitated with the relevant lecturer if needed.

b) Work-based Portfolio Development

The TSC supports the development of the apprentices' Work-based Portfolio by helping them plan, collect and present evidence over the course of their practical period. Apprentices present their evidence in a series of reflective statements that are reviewed by the TSCs who provide developmental feedback and help reference the evidence against the standard in their ePortfolio on OneFile. This iterative approach to portfolio development gives the apprentice the opportunity to present their best evidence in the most effective way.

c) Maintain Visible Progress Records on OneFIle

The OneFile ePortfolio platform is a live record of the apprentices' progress on the programme that is visible to the TSC, the apprentice and the employer as well as centre managers. The employer has multiple separate logins with different access levels so they can view their learners' progress as appropriate. Records are maintained by the apprentice and the TSC to include the Work-based Portfolio, module progress, targets and documented reviews, check-ins and communication regarding the apprentice. CPOMS is the system for potentially sensitive information such as protected characteristics if they do not wish to disclose to their employer.

III. Individual Learning Plan (ILP)

Apprentices will be supported in the development of an individual Learning Plan, demonstrating application of the programme knowledge and understanding, skills and behaviours in the work environment. Learning and support needs will be easily identified through the Individual Learning Plan (ILP) that apprentices and skills coaches maintain and review at least quarterly or more frequently if required. The prime forum for this support will be the work-integrated learning activity at levels 4, 5 and 6 and support and review meetings between the apprentice, employer and skills coach.

IV. College- employer collaboration

The employer will appoint a workplace mentor, who will work closely with the TSC to oversee delivery and evidencing of relevant training delivered in the workplace, in agreement with the College.

The employer and College will work collaboratively to ensure the apprentice is able to meet the requirements of both the degree and the Apprenticeship Certificate: Digital & Technology Solutions, notably through workplace support, work-integrated training and College module completion. One example of this collaborative support is the final year (Level 6) project, which requires the apprentices to agree a project to be carried out within the workplace and as part of the apprentice's usual work, with appropriate employer allowance and College academic support. This project must fit the constraints of the business, but also enable the apprentice to meet degree and Apprenticeship Certificate: Digital & Technology Solutions Standard criteria.

V. Personal Development

During the course of study, students will be provided with a number of opportunities to reflect on their progress and to think about what they want to improve and develop. Co-curricular activities have been included such as the followings:

- workshops and resources designed to support the transition to HE-Level study;
- workshops and resources focussing on particular academic skills areas (for example, essay-writing, and presentation skills,);
- reflective individual and group learning activities, including reflective statements;
- the opportunity to meet with skills coaches to discuss their progress and development starting during the Launchpad.

VI. Training Plan (previously called the Commitment Statement)

The apprentice shall

- Attend training sessions, either on- or off-the-job, as and when required;
- Provide all evidence to demonstrate eligibility for the programme.
- Liaise with the skills coach and the employer, as applicable, in relation to any reviews, monitoring, or audits required for the apprenticeship, including providing information for, and access to, all documentation relevant to the apprenticeship on request;

The employer shall

- Provide a safe and supportive environment for the work-based elements of the apprenticeship;
- Provide a workplace mentor to supervise their progress through the programme both from an academic and pastoral perspective;
- Ensure that the apprentice's roles at work allow him/her to gain the wider employment experience required by the programme and the apprenticeship framework;
- Ensure that the apprentice is given sufficient time to enable him/her to complete all elements of the work-based learning elements of the programme within his/her contracted working hours (this is part of the 20% off-the-job learning commitment);

- Allow the apprentice to attend all agreed off-the-job learning and shall continue to pay the apprentice during such time, where it falls within normal working hours (this is part of the 20% off-the-job learning commitment);

The College shall

- Deliver the academic learning elements of the programme and establish and/or deliver on- and off-the-job learning to meet the needs of the apprenticeship, the apprentice and the employer;
- Monitor the apprentice's progress in liaison with the employer, and the skills coach shall keep the employer informed of the apprentice's progress, including any disciplinary issues;
- Monitor the quality of learning delivery to ensure that it meets the required standards, including liaising with both the employer and the apprentice.
- Provide a clear process for solving queries and complaints from apprentices and employers.
- Keep the training plan up to date with the latest information.

6. Criteria for admission
(For apprenticeships this should include details of how the criteria will be used with employers who will be recruiting apprentices.)

All students must be interviewed, assessed and offered a position by an employer before being admitted to the degree. Although the College may receive direct applications and filter these applications before passing them to prospective employers some apprentices may apply directly to an employer. Either way, after acceptance by an employer, the College will require a formal application, which will be assessed according to the following criteria.

Applicants must have one of the following:

- At least three A-Level Qualifications at grade C or above, preferably from STEM subjects.

- AND/OR Level 3 (QCF) BTEC National Diploma in Information Technology, or computing related courses– MMM / MM

- Level 2 Professional qualification in a suitable computing related area. (students can possess a combination of these qualifications if relevant)

- Or other equivalents including apprenticeship pathways at level 3.

- Additionally, students are normally required to have a grade 5 or above in GCSE Maths and English Language or to have demonstrated ability in Maths and English in further studies.

- Admissions for entry up to commencement of Level 6, demonstrating Accreditation of Prior Learning (APL), or Accrediting Prior Experiential Learning (APEL) will also be considered on a case-by-case basis.

- In exceptional cases, the College may admit students who do not satisfy the above requirements, if they are able to demonstrate that by virtue of other studies and/or experience, they are capable of managing their studies and benefiting from the route. For example, Ada can support learners during their course of study to gain their GCSE Maths and English Language qualifications through one to one support and a learning software solution.

- In addition to College selection criteria and process, the employer may have additional pre-College filtering processes in place, which should be shared with the College.

7. Language of study
English

8. Information about non-OU standard assessment regulations (including PSRB requirements)
N/A

9. For apprenticeships in England End Point Assessment (EPA).
(Summary of the approved assessment plan and how the academic award fits within this and the EPA)

An Overview:

The End-Point Assessment (EPA) is the final assessment of the apprenticeship element of the programme that each apprentice is required to take in order to complete their apprenticeship. It occurs at the end of their apprenticeship, after the completion of the formal degree. It is important to note that the EPA is assessed separately and independently from the degree, although the production of some elements of the EPA are integrated into the degree programme, to reduce the workload on the apprentice as much as possible.

The EPA is delivered by the college that is an End-Point Assessment Organisation (EPAO) and is registered with the Education and Skills Funding Agency (ESFA). The End Point Assessment is a holistic assessment of occupational competency against the Knowledge, Skills and Behaviours (KSB) that are listed in the standard. Various assessment methods (e.g. project report and interview and presentation) are utilised in order to ensure a holistic evaluation of whether the apprentice has developed these KSBs whilst on programme.

Prior to entering the Gateway, the skills coaches prepare the learner for the EPA in their quarterly meetings. Also, the academic team offers a series of 3 lectures which gradually prepare the learner to maximise learner success through the EPA process.

The college has produced a clear assessment rubric that details how the various assessment elements of the EPA combine to produce this final classification.

Three assessment elements are used in the EPA for the DTS Degree Apprenticeship:

i. Synoptic Project Dissertation
ii. Project Presentation
iii. Competency-Based Interview (viva) on project and work-based portfolio

The Synoptic Project Dissertation is produced as part of the degree qualification and sent for external assessment together with the work-based portfolio by the college prior to the assessment day. The components are reviewed by both the external and internal assessors ahead of the assessment day. The assessment day consists of a Project Presentation and Competency-Based Interview. These two components are conducted by a panel containing the external and internal assessors and a representative from the employer.

In summary, the project dissertation is weighted as 20 credits and the presentation and interview are 10 credits together. That said, each element of the EPA must be passed individually, e.g. students cannot pass the EPA overall without producing a project dissertation, or without taking part in the presentation and interview.

The work-based portfolio and a proposal for the project are not considered as components of the EPA. However, they are the requirements for the Gateway and a minimum of pass are required for each in order for the apprentice to enter the EPA phase.

Apprenticeship outcomes

Four possible classifications are awarded for completion of the apprenticeship:

Distinction 70% +
Merit 60-69%
Pass 40-59%
Fail below 40%

See Annexe 4 for a Diagrammatic Demonstration of the EPA

Degree and apprenticeship assessment

The formal qualification (the degree) is assessed separately from the endpoint assessment of the apprenticeship and the outcomes of one do not affect those of the other. As such, it is possible for someone to excel in the academic qualification, but receive a lower mark in the EPA (because they failed to demonstrate occupational competency against the specific KSBs listed in the standard).

The project dissertation is produced and assessed as an element of the degree qualification, and will be marked as such. This has been done so that no additional work is required in order to complete the apprenticeship following the completion of the programme.

Results, certification and resits

Results of the end-point-assessment will be communicated to the apprentice and employer two weeks after the interview day. However, it can take up to 6 weeks for the official certificate of completion to arrive, as this is produced by the IfATE. Feedback cannot be provided on the assessment day as the judgement has to go through internal quality and verification processes by Ada. Official confirmation of the degree (including final classification) will be communicated at a similar time, following the Exam Board meeting and ratification by the Open University.

If an apprentice fails an individual element of the EPA, then they will be able to retake that element at a subsequent time. Ada will liaise with the apprentice, employer and the external assessor to find a suitable time and discuss any additional requirements that are needed in order to support the apprentice.

10. Methods for evaluating and improving the quality and standards of teaching and learning.

A range of methods are used for evaluating and improving the quality and standards of teaching and learning. These include:

Annual Programme Review

- An annual Programme Report and associated action plan is informed by the annual modules' review, external examiner reports, programme team responses through Teaching, Learning & Assessment Committee (TLA) and apprentice feedback through each module's evaluation and Staff-Student Liaison Committee (SSLC).

- The procedures for the annual programme review provide a framework for the Head of Degree Programmes to reflect upon the outcomes of the module review process, consider feedback from external examiner(s) and students, as well as data on student achievement and the qualifications awarded.

- The Head of Degree Programmes has responsibility for monitoring the programmes of study as specified in the Calendar. They are asked to comment on the curriculum and assessment methods across the programme, the learning resources that support it, the implementation of changes proposed in earlier monitoring reports and any future developments.

- The Head of Degree Programmes submits the Annual Programme Review report to the Academic Board and the Open University. Annual Programme Review reports are considered at the Learning, Teaching and Assessment Committee. Any relevant points are reported to the Staff-Student Liaison Committee.

<u>Teaching, Learning and Assessment Committee</u>

- The committee will ensure the quality of teaching, learning and assessment in Ada's HE provision is of a consistently high standard.

- It will make evidence-based recommendations for improvement in HE teaching, learning and assessment across the College's HE programmes.

- It will incorporate recommendations and suggestions from the academic team, employers and also the OU academic Reviewer.

- The committee will also ensure integration across 16-19 and 19+ provision in line with Ada's overarching approach to industry-led teaching and learning that sits at the heart of the College's mission statement and role as a Government National College.

- On a regular basis a review will be undertaken of teaching and learning across the HE programmes. This will incorporate a review of the variety of assessment

methods of student progress and learning outcomes. This will achieve three outcomes:

i. An on-going enhancement of pedagogical practices and student learning at Ada through on-going incremental improvements in practice that will be added to by peer-to-peer support and development as well as continuous professional development for staff and the use of self-evaluation tools for students through our VLE.

ii. Implementation of evidence-based changes to assessment practice and processes.

iii. The reliability of recommendations to the Board of Examiners for the awards of qualification are an accurate reflection of each HE students' progress on their programme of study and the development of the knowledge and skills against the QAA Quality Code Qualification Descriptors and Subject Specific Statement.

Apprentice Feedback

Apprentice feedback is collected in a variety of ways including module evaluations and SSLC. The feedback loop is typically closed quickly through the apprentice representatives and/ or module leader. Where matters cannot be resolved immediately apprentices are appraised by the programme leader, who will also flag issues at Academic Board level as appropriate. This highlights the strength and influence of the apprentice voice.

<u>Staff and Student Liaison Committee</u>

- The Staff and Student Liaison Committee (SSLC) is made up of student representatives and members of academic staff and provides a link between staff and students enabling discussion on matters to do with teaching and learning that don't fit the stricter remit of the Academic Board nor Teaching, Learning and Assessment committee.

- The SSLC deals with student feedback and input and is the main conduit for ensuring student voice within the HE programmes. Student representation on the committee ensures that the SSLC is well-informed of developments across the HE programmes in the College and can usefully inform future strategy, policy development and programme growth and evolution.

- The SSLC should be consulted on any major changes to course structures or content and must not consider matters relating to named members of staff or students, nor is the SSLC the place for students to air their personal grievances.

In addition to above, the following methods are also used for evaluating and improving the quality and standards of teaching and learning:

- Staff development events aimed at improved teaching and learning, attended by academic staff.

- Professional currency of staff, including awareness of developments in external reference points, such as subject and professional standards and benchmarks.

- Lesson observations, undertaken as part of the College's quality assurance framework. These include short walk-through, observations and a minimum of one longer lesson observation during each academic year. Where areas for improvement are identified, the Head of Faculty is assigned to support development of practice. Re-observations are then scheduled to monitor impact.

10. Changes made to the programme since last (re)validation

Major changes have been made to the programme in two ways :

i. Restructuring the programme at each level
ii. Inclusion of a new pathway

Programme's Restructuring
Major restructuring of the programme has been accomplished through the delivery of four modules at each level. The restructured programme is made up of four thirty-credit modules at each level except level six where a forty-credit dissertation and a twenty-credit work-based portfolio is included.

Within the programme , there will be core modules, which all students within the programme must take to qualify for the BSc(Hons) award, as well specialised modules which are of direct relevance to their chosen pathway. The restructured programme will offer four core modules at level 4, and an equal combination of core and specialised modules at levels 5 and 6.

The components of the revised module descriptors (the learning outcomes, the indicative content, the assessment strategy and the resources), as well as new modules as result of merging some existing modules reflect the enrichment of the modules that will in turn account for the increase of the module's credit.

The change to include only core modules at level 4 allows greater flexibility for both apprentices and employers, giving apprentices a full 12 months to make changes to their specified pathway if necessary. While changes to pathways are rare, there will be apprentices and employers who will benefit from that flexibility.

The four more substantial (30 credit) modules replacing the six 20 credit modules provides a more streamlined programme that consolidates and dives deeper into content that was at risk of repeating at a shallow level across the current module suite.

Inclusion of new Pathway

The Cyber Security Analyst pathway is included as a new pathway. As with Software Engineer, Data analyst, and IT Consultant, the new pathway contains four specialised modules, accounting for 120 credits. The remaining 240 credits are provided by the eight core modules that apply to all pathways.

Annexe 1 - Curriculum map

This table indicates which study units assume responsibility for delivering (shaded) and assessing (x) particular programme learning outcomes.

All units which assess particular knowledge, skills and behaviours also assume responsibility for delivering this content as well.

Level 4	Study module/unit	Programme outcomes															
		A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
Core	SDLC & Project Management	x						x				x	x	x	x	x	x
	Computer Programming		x	x		x	x			x					x		x
	Database Systems		x						x		x					x	
	Cloud Computing				x			x				x			x		x

Level 5	Study module/unit	Programme outcomes																									
		A5	A6	A7	A8	A9	A10	A11	B5	B6	B7	B8	B9	B10	B11	B12	C5	C6	C7	C8	C9	C10	C11	D5	D6	D7	D8	D9
Core	Experience Design	x							x	x	x						x											x
	Digital Technology Project		x	x							x	x						x	x					x	x	x	x	x
Software Engineer	Advanced Programming & Algorithmic Design				x								x							x						x	x	
	Applied Artificial Intelligence				x								x							x						x	x	

Level 5	Study module/unit	A5	A6	A7	A8	A9	A10	A11	B5	B6	B7	B8	B9	B10	B11	B12	C5	C6	C7	C8	C9	C10	C11	D5	D6	D7	D8	D9
Data Analyst	Data Visualisation & Statistics					x								x							x						x	
	Data Analytics with Python					x								x							x						x	
IT Consultant	Entrepreneurship & Innovation						x								x							x		x				
	Business Risk Analysis						x								x							x					x	
Cyber Security Analyst	Cyber Security in Society							x								x							x	x				
	Cyber security Analytics							x								x							x				x	

Level 6	Study module/unit	Programme outcomes																											
		A 12	A 13	A 14	A 15	A 16	A 17	A 18	A 19	B 13	B 14	B 15	B 16	B 17	B 18	B 19	B 20	C 12	C 13	C 14	C 15	C 16	C 17	C 18	D 10	D 11	D 12	D 13	D 14
Core	Project Dissertation	x	x	x						x	x	x						x	x						x	x		x	
	Digital Leadership				x								x							x										x
	Work-based Portfolio (zero credit)	x	x							x	x								x								x		

Level 6	Study module/unit	A 12	A 13	A 14	A 15	A 16	A 17	A 18	A 19	B 13	B 14	B 15	B 16	B 17	B 18	B 19	B 20	C 12	C 13	C 14	C 15	C 16	C 17	C 18	D 10	D 11	D 12	D 13	D 14
Software Engineer	Enterprise Software Engineering					x								x							x							x	
	Software Quality Assurance					x								x							x							x	
Data Analyst	Machine Learning						x								x							x			x				
	Big Data Analytics						x								x							x			x				
IT Consultant	Emerging Technologies in Business							x								x							x			x			
	Technology Entrepreneurship in Practice							x								x							x			x			
Cyber Security Analyst	Cyber Security Management								x								x							x	x				
	Cyber Security Penetration Testing								x								x							x	x				

Annexe 2 - Curriculum mapping against the apprenticeship standard
Level 6 Apprenticeship Standard for Digital & Technology Solutions – degree apprenticeship

Level 6 Apprenticeship Standard Knowledge, Skills and Behaviours (KSBs)
Digital and Technology Solutions

KNOWLEDGE (K1 – K68)
K1: Core. How organisations adapt and exploit digital technology solutions to gain a competitive advantage.
K2: Core. The principles of strategic decision making concerning the acquisition or development of digital and technology solutions. For example business architecture approaches such as capability models and target operating models.
K3: Core. Principles of estimating the risks and opportunities of digital and technology solutions.
K4: Core.

Techniques and approaches involved in creating a business case for new digital and technology solutions. For example journey, product and capability mapping and value chains.
K5: Core. A range of digital technology solution development techniques and tools.
K6: Core. The approaches and techniques used throughout the digital and technology solution lifecycle and their applicability to an organisation's standards and pre-existing tools.
K7: Core. The roles, functions and activities within digital technology solutions within an organisation.
K8: Core. How teams work effectively to produce digital and technology solutions.
K9: Core. The concepts and principles of leadership.
K10: Core.

Management techniques and theories. For example, effective decision making, delegation and planning methods, time management and change management.
K11: Core. The nature and scope of common vulnerabilities in digital and technology solutions. For example, the risks of unsecure coding and unprotected networks.
K12: Core. The role of data management systems within Digital and Technology Solutions.
K13: Core. Principles of data analysis for digital and technology solutions.
K14: Core. A range of quantitative and qualitative data gathering methods and how to appraise and select the appropriate method.
K15: Core. Principles of estimating cost, and time resource constraints within digital and technology solutions activities.
K16: Core. Fundamental computer networking concepts in relation to digital and technology solutions. For example, structure, cloud architecture, components, quality of service.

K17: Core. Reporting techniques, including how to synthesise information and present concisely, as appropriate to the target audience.
K18: Core. Techniques of robust research and evaluation for the justification of digital and technology solutions.
K19: Core. Relevant legal, ethical, social and professional standards to a digital and technology solution. For example, Diversity, Accessibility, Intellectual Property, Data Protection Acts, Codes of Practice, Regulatory and Compliance frameworks.
K20: Core. Sustainable development approaches as applied to digital and technology solutions such as green computing.
K21: Software engineering professional. How to operate at all stages of the software development life cycle and how each stage is applied in a range of contexts. For example, requirements analysis, design, development, testing, implementation.
K22: Software engineering professional. Principles of a range of development techniques, for each stage of the software development cycle that produce artefacts and the contexts in which they can be applied. For example UML, unit testing, programming, debugging, frameworks, architectures.

K23: Software engineering professional. Principles of a range of development methods and approaches and the contexts in which they can be applied. For example Scrum, Extreme Programming, Waterfall, Prince2, TDD.
K24: Software engineering professional. How to interpret and implement a design, compliant with functional, non-functional and security requirements including principles and approaches to addressing legacy software development issues from a technical and socio-technical perspective. For example architectures, languages, operating systems, hardware, business change.
K25: Software engineering professional. The factors affecting product quality and approaches for how to control them throughout the development process. For example security, code quality, coding standards.
K26: Software engineering professional. How to select and apply a range of software tools used in Software Engineering.
K27: Software engineering professional. Approaches to the interpretation and use of artefacts. For example UML, unit tests, architecture.
K28: Software engineering professional.

Approaches to effective team work and the range of software development tools supporting effective teamwork. For example, configuration management, version control and release management.
K29: IT consultant professional. Principles of different consulting methodologies. For example issue-based, and hypothesis based.
K30: IT consultant professional. How consulting interfaces with project management, business analysis and business management.
K31: IT consultant professional. Principles of change management within organisations.
K32: IT consultant professional. The barriers to solving digital and technology problems or maximising opportunities.
K33: IT consultant professional. Approaches to presenting recommendations to stakeholders and influencing action.
K34: IT consultant professional. Approaches to analytical and critical thinking to define business problems objectively and create value for the client.

K35: IT consultant professional. Questioning strategies and active listening to ensure all requirements are gathered.
K36: IT consultant professional. The ethical and legal requirements in client and provider relationships.
K37: Business analyst professional. Elicitation and Collaboration approaches, including how to prepare for and conduct elicitation activities and confirm the results.
K38: Business analyst professional. Approaches to Requirements Life Cycle Management including how to manage and maintain requirements and design information from inception to retirement of a product.
K39: Business analyst professional. Principles of Strategy Analysis, including how to identify the business need, address that need, and align the change strategy within the organisation.
K40: Business analyst professional. Solution Evaluation, including how to assess the performance of and value delivered by a solution and to recommend improvements on increasing values.
K41: Business analyst professional.

Legislation and industry standards relevant to Business Analysis in the organisation and sector.
K42: Business analyst professional. The purpose and value of quality assurance techniques.
K43: Business analyst professional. A range of Business Analysis investigative techniques.
K44: IT consultant professional, Business analyst professional. Approaches to change control and requirements management.
K45: Cyber security professional . Principles of cyber security tools and techniques.
K46: Cyber security professional . Principles of quantitative and qualitative risk management theory including the role of risk stakeholders.
K47: Cyber security professional . Concepts and approaches to cyber security assurance.
K48: Cyber security professional .

Key legislative frameworks and the regulatory landscape for cyber security including Data Protection Act 2018 , Network Information System Directive 2018, Regulation of Investigatory Powers Act 2000, ISO 27001.
K49: Cyber security professional . Approaches to incident response and management including escalation and investigation of cyber security breaches and their root cause.
K50: Cyber security professional . Ethical principles and codes of good practice of at least one significant cyber security professional body and the ethical responsibilities of a cyber security professional.
K51: Cyber security professional . Principles of common security architectures and methodologies.
K52: Cyber security professional . Approaches to deployment of cyber security technology components in digital systems to provide security functionality. For example hardware and software to implement security controls.
K53: Computing data analyst professional. The barriers that exist to effective data analysis between analysts and their stakeholders and how to avoid or resolve these.
K54: Computing data analyst professional.

How to critically analyse, interpret and evaluate complex information from diverse datasets.
K55: Computing data analyst professional. Data formats, structures, architectures and data delivery methods including “unstructured” data.
K56: Computing data analyst professional. Sources of data such as files, operational systems, databases, web services, open data, government data, news and social media.
K57: Computing data analyst professional. Approaches to data processing and storage, database systems, data warehousing and online analytical processing, data-driven decision making and the good use of evidence and analytics in making choices and decisions.
K58: Computing data analyst professional. How Data Analytics operates within the context of data governance, data security, and communications.
K59: Computing data analyst professional. How Data Analytics can be applied to improve an organisation’s processes, operations and outputs.
K60: Computing data analyst professional. How data and analysis may exhibit biases and prejudice. How ethics and compliance affect Data Analytics work, and the impact of international regulations. For example, General Data Protection Regulation, Data Protection Act 2018.

K61: Network engineering professional. The role and function of virtual or physical network components and functions and typical topologies and service architectures.
K62: Network engineering professional. The main network protocols in use, their purpose, features and relationship to each other. For example, Ethernet, IP (Internet Protocol), TCP (Transmission Control Protocol), OSPF (Open Shortest Path First).
K63: Network engineering professional. The benefits and risks of cloud computing and the common integration deployments (private, public, hybrid). Including the benefits and risks of virtualisation as a concept; key features of virtualisation and current cloud platforms available.
K64: Network engineering professional. The main factors that affect network performance, and how to mitigate these on network performance by implementing changes to QoS. For example, Traffic Shaping, Policing, Queuing, Topology (physical and logical), and Network Policy (Traffic Analysis, DPI (Deep Packet Inspection).
K65: Network engineering professional. Principles of failure modes in protocols. For example, why a protocol may 'hang' and the effect of data communication errors and approaches to addressing failures to optimise network performance.
K66: Network engineering professional.

Key security concepts. For example threats, vulnerabilities, exploits, detection and mitigation techniques, and security program elements such as user awareness, physical access control, multi-layer defence models.
K67: Network engineering professional. SDN (Software Defined Networking) and Network Function Virtualisation Core Principles. For example, Control Plane Separation, flexibility, overlay networks, disassociation of software and hardware layers.
K68: Network engineering professional. Key elements of mobile networks. For example RAN (Radio Access Network), EPC (Evolved Packet Core), IMS (IP Multimedia Subsystem) including some specific key functions such as S/P/U-Gateways and the concepts in communicating over free-space media such as interference, ground bounce, encryption and in mobile endpoint platforms such as tracking user location and roaming.

SKILL (S1 – S63)
S1: Core. Analyse a business problem to identify the role of digital and technology solutions.
S2: Core. Identify risks, determine mitigation strategies and opportunities for improvement in a digital and technology solutions project.
S3: Core. Analyse a business problem in order to specify an appropriate digital and technology solution.

S4: Core. Initiate, design, code, test and debug a software component for a digital and technology solution.
S5: Core. Apply relevant standard processes, methods, techniques and tools. For example, ISO Standards, Waterfall, Agile in a digital and technology solution project.
S6: Core. Manage digital and technology solutions projects. For example, identifying and resolving deviations from specification, applying appropriate Project Management methodologies.
S7: Core. Work effectively within teams, leading on appropriate digital technology solution activities.

S8: Core. Apply relevant organisational theories. For example, change management principles, marketing approaches, strategic practice, and IT service management to a digital and technology solutions project.
S9: Core. Apply relevant security and resilience techniques to a digital and technology solution. For example, risk assessments, mitigation strategies.
S10: Core. Initiate, design, implement and debug a data product for a digital and technology solution.
S11: Core. Determine and use appropriate data analysis techniques. For example, Text, Statistical, Diagnostic or Predictive Analysis to assess a digital and technology solutions.

S12: Core. Plan, design and manage simple computer networks with an overall focus on the services and capabilities that network infrastructure solutions enable in an organisational context.
S13: Core. Report effectively to colleagues and stakeholders using the appropriate language and style, to meet the needs of the audience concerned.
S14: Core. Research, investigate, and evaluate innovative technologies or approaches in the development of a digital and technology solution. Back to Grading

S15: Core. Apply relevant legal, ethical, social and professional standards to a digital and technology solution.
S16: Software engineering professional. Identify and define software engineering problems that are non-routine and incompletely specified.
S17: Software engineering professional. Provide recommendations as to the most appropriate software engineering solution.
S18: Software engineering professional. Use appropriate analysis methods, approaches and techniques in software engineering projects to deliver an outcome that meets requirements.

S19: Software engineering professional. Implement software engineering projects using appropriate software engineering methods, approaches and techniques.
S20: Software engineering professional. Respond to changing priorities and problems arising within software engineering projects by making revised recommendations, and adapting plans as necessary, to fit the scenario being investigated.
S21: Software engineering professional. Determine, refine, adapt and use appropriate software engineering methods, approaches and techniques to evaluate software engineering project outcomes.

S22: Software engineering professional. Evaluate learning points arising from software engineering work undertaken on a project including use of methods, analysis undertaken, selection of approach and the outcome achieved, in order to identify both lessons learnt and recommendations for improvements to future projects.
S23: Software engineering professional. Extend and update software development knowledge with evidence from professional and academic sources by undertaking appropriate research to inform best practice and lead improvements in the organisation.
S24: IT consultant professional. Analyse client needs and determine how to advise them strategically through improved business processes, new ideas, or technology solutions.

S25: IT consultant professional. Effectively communicate value add to the client through a variety of media. For example, presentations, written reports, Storytelling in a professional setting through performing socio-technical process improvements in a range of environments.
S26: IT consultant professional. Make evidence based recommendations taking into account risks, costs, and benefits.
S27: IT consultant professional. Participate in walk-throughs for Information Technologies, to identify, document and evaluate key risks within a client's organisation.
S28: IT consultant professional. Perform stakeholder analysis to identify, determine and deepen understanding of system requirements and develop client relationships.

S29: IT consultant professional. Effect change within an organisation through evaluation of a new system, process or initiative.
S30: IT consultant professional. Ensure legal and ethical requirements are accommodated in the development of digital and technology solutions.
S31: IT consultant professional. Evaluate the success of new systems, processes, or initiatives.
S32: Business analyst professional. Use requirements elicitation, analysis and documentation to produce an acceptable solution for business problems or further opportunities.

S33: Business analyst professional. Conduct Process Analysis, Definition, Mapping and Modelling within a business situation without supervision.
S34: Business analyst professional. Produce Use Cases which are of value to all stakeholders of a system.
S35: Business analyst professional. Use tools and benchmarking to support modelling and requirements gathering and recommend approaches to team members as required.
S36: Business analyst professional. Produce a business case to scope a proposed project including business benefits and recommendations.

S37: Business analyst professional. Use products of analysis in the design and development of a system.
S38: Business analyst professional. Evaluate the impacts of model selection and how they inter-relate with each other when generating business analytics.
S39: Business analyst professional. Recommend and use appropriate software tools to implement Business Analysis tasks and outcomes.
S40: Cyber security professional . Discover, identify and analyse security threats, attack techniques and vulnerabilities and recommend mitigation and security controls.

S41: Cyber security professional . Undertake security risk assessments for complex systems without direct supervision and propose a remediation strategy relevant to the context of the organisation.
S42: Cyber security professional . Recommend improvements to the cyber security approaches of an organisation based on research into future potential cyber threats and considering threat trends.
S43: Cyber security professional . Manage cyber security risk.
S44: Cyber security professional . Use appropriate cyber security technology, tools and techniques in relation to the risks identified.

S45: Cyber security professional . Lead cyber security awareness campaigns and evaluate their effectiveness.
S46: Cyber security professional . Analyse cyber security requirements against other design requirements for systems or products, identify conflicting requirements and recommend appropriate solutions with clear explanation of costs and benefits.
S47: Cyber security professional . Lead the design and build of systems in accordance with a security case to address organisational challenges.
S48: Computing data analyst professional. Define Data Requirements and perform Data Collection, Data Processing and Data Cleansing.

S49: Computing data analyst professional. Apply different types of Data Analysis, as appropriate, to drive improvements for specific business problems.
S50: Computing data analyst professional. Find, present, communicate and disseminate data analysis outputs effectively and with high impact through creative storytelling, tailoring the message for the audience. Visualise data to tell compelling and actionable narratives by using the best medium for each audience, such as charts, graphs and dashboards.
S51: Computing data analyst professional. Identify barriers to effective analysis encountered both by analysts and their stakeholders within data analysis projects.

S52: Computing data analyst professional. Apply a range of techniques for analysing quantitative data such as data mining, time series forecasting, algorithms, statistics and modelling techniques to identify and predict trends and patterns in data.
S53: Computing data analyst professional. Apply exploratory or confirmatory approaches to analysing data. Validate and test stability of the results.
S54: Computing data analyst professional. Extract data from a range of sources. For example, databases, web services, open data.
S55: Computing data analyst professional. Analyse in detail large data sets, using a range of industry standard tools and data analysis methods.

S56: Network engineering professional. Identify and collate stakeholder needs in relation to computer network requirements, plans and designs.
S57: Network engineering professional. Plan, design, document, and develop the relevant elements of a computer network within an organisation or between organisations, taking into account customer requirements (performance, scale), constraints (budget, equipment availability), and define policies for their use.
S58: Network engineering professional. Monitor performance and ensure networks are configured correctly and perform as expected by designers or architects. Undertake capacity management and audit of IP addressing and hosted devices.

S59: Network engineering professional. Investigate, troubleshoot and resolve data network faults in local and wide area environments, using information from multiple sources, Physically or Remotely by console connection. Recommend and implement short term fixes to restore service and, or, quality of experience and recommend longer term changes to prevent recurrence or reduce impact of future occurrences.
S60: Network engineering professional. Implement computer networks from a design including testing and validation. This includes populating variables in configurations, for example, IP addresses and subsequent application of configuration to equipment such as routers, switches, firewalls.
S61: Network engineering professional. Secure network systems by establishing and enforcing policies, and defining and monitoring access. Support and administer firewall environments in line with IT security policy.

S62: Network engineering professional. Research and evaluate emerging network technologies and assess relevance to current network requirements. Provide an objective opinion on how new features and technologies may be incorporated as required by the organisation.
S63: Network engineering professional. Investigate security concerns or attacks. For example, Distributed Denial of Service (DDOS), port scanning, assessing key metrics and indicators, evidencing the chosen steps to mitigate.

BEHAVIOUR (B1 – B8)
B1: Core. Has a strong work ethic and commitment in order to meet the standards required?
B2: Core. Reliable, objective and capable of both independent and team working.
B3: Core. Acts with integrity with respect to ethical, legal and regulatory requirements ensuring the protection of personal data, safety and security.

B4: Core. Commits to continuous professional development; maintaining their knowledge and skills in relation to developments in digital and technology solutions that influence their work.
B5: Core. Interacts professionally with people from technical and non-technical backgrounds. Presents data and conclusions in an evidently truthful, concise and appropriate manner.
B6: Core. Participates in and shares best practice in their organisation, and the wider community for aspects relevant to digital and technology solutions.

B7: Core. Maintains awareness of trends and innovations in the subject area, utilising a range of academic literature, online sources, community interaction, conference attendance and other methods which can deliver business value.
B8: Core. Champions diversity and inclusion in their work ensuring that digital technology solutions are accessible.

This table indicates which study units assume responsibility for delivering (shaded) and assessing (x) particular knowledge, skills and behaviours.

All units which assess particular knowledge, skills and behaviours also assume responsibility for delivering this content as well.

KNOWLEDGE																					
Level	Modules	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10	K11	K12	K13	K14	K15	K16	K17	K18	K19	K20
4	*SDLC & Project Management*						x		x		x							x			
	Computer Programming					x	x					x									
	Database Systems					x						x	x	x							
	Cloud Computing	x	x	x	x																
5	Experience Design						x													x	x
	Digital Technology Project				x			x	x								x		x		
6	*Project Dissertation*						x	x							x						
	Digital Leadership								x	x	x										
	Work-based Portfolio (zero credit)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

SKILL																
Level	Modules	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
4	*SDLC & Project Management*			x		x	x	x								
	Computer Programming				x						x					
	Database Systems				x					x	x					
	Cloud Computing	x	x	x											x	x
5	Experience Design				x						x			x		
	Digital Technology Project	x				x		x		x						
6	*Project Dissertation*		x				x							x	x	x
	Digital Leadership						x	x	x							
	Work-based Portfolio	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

BEHAVIOUR									
Level	Modules	B1	B2	B3	B4	B5	B6	B7	B8
4	*SDLC & Project Management*		x						
	Computer Programming	x	x						
	Database Systems			x	x				
	Cloud Computing	x	x			x		x	
5	Experience Design						x		x
	Digital Technology Project			x			x		x
6	*Project Dissertation*					x		x	
	Digital Leadership						x	x	x
	Work-based Portfolio (zero credit)	x	x	x	x	x	x	x	x

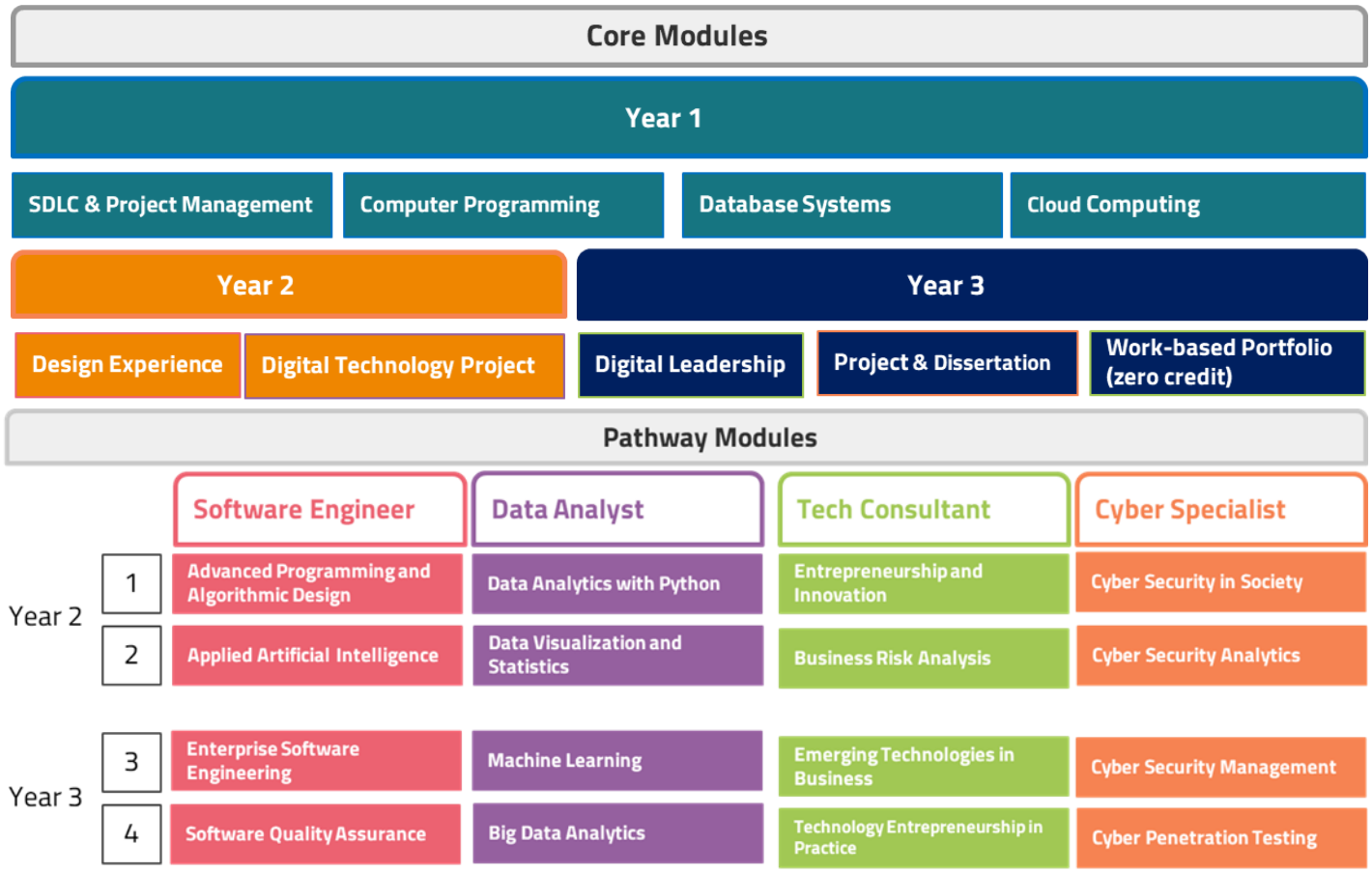
Software Engineering Pathway									
Level	Modules	K21	K22	K23	K24	K25	K26	K27	K28
5	*Advanced Programming & Algorithmic Design*	X	X			X	X		
	Applied Artificial Intelligence				X		X		
6	*Enterprise Software Engineering*		X	X	X			X	X
	Software Quality Assurance	X		X		X		X	X
	Modules	S16	S17	S18	S19	S20	S21	S22	S23
5	*Advanced Programming & Algorithmic Design*	X		X	X		X		
	Applied Artificial Intelligence		X		X			X	X
6	*Enterprise Software Engineering*	X	X			X		X	
	Software Quality Assurance			X		X	X		X

	IT Consultant Pathway									
Level	Modules	K29	K30	K31	K32	K33	K34	K35	K36	K44
5	Entrepreneurship & Innovation	X		X						
	Business Risk Analysis		X		X		X		X	
6	Emerging Technologies in Business				X					X
	Technology Entrepreneurship in Practice					X		X		
Level	Modules	S24	S25	S26	S27	S28	S29	S30	S31	-
5	Entrepreneurship & Innovation				X			X		
	Business Risk Analysis	X		X		X			X	
6	Emerging Technologies in Business	X					X			
	Technology Entrepreneurship in Practice		X			X				

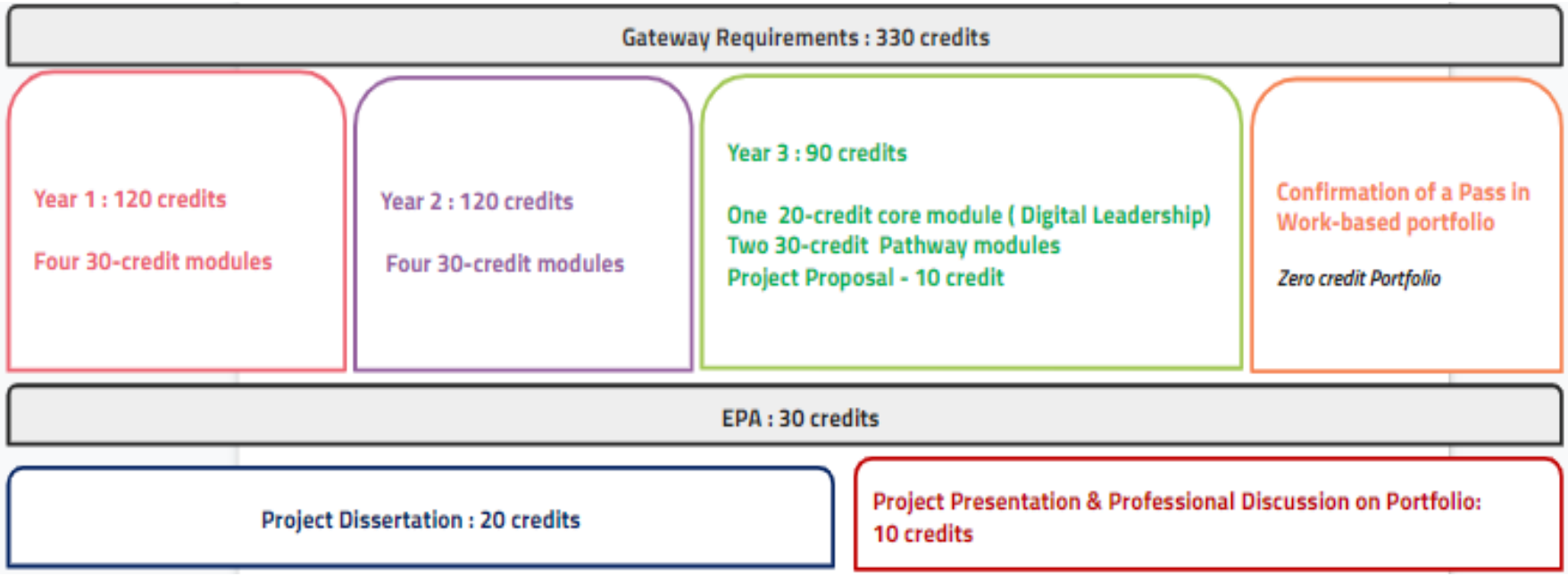
	Cyber Security Pathway								
Level	Modules	K45	K46	K47	K48	K49	K50	K51	K52
5	Cyber Security in Society	X	X	X	X				
	Cyber security Analytics					X	X		
6	Cyber Security Management		X	X		X		X	X
	Cyber Security Penetration Testing	X			X			X	
Level	Modules	S40	S41	S42	S43	S44	S45	S46	S47
5	Cyber Security in Society	X	X						
	Cyber security Analytics			X		X			
6	Cyber Security Management		X				X	X	X
	Cyber Security Penetration Testing	X			X	X			

	Data Analyst Pathway									
Level	Modules	K53	K54	K55	K56	K57	K58	K59	K60	-
	Data Visualisation & Statistics		X	X						
	Data Analytics with Python	X	X							
	Machine Learning					X		X		
	Big Data Analytics				X		X		X	
Level	Modules	S48	S49	S50	S51	S52	S53	S53	S54	S55
5	Data Visualisation & Statistics	X							X	
	Data Analytics with Python			X	X					
6	Machine Learning					X				X
	Big Data Analytics		X				X		X	

Annex 3 : Diagrammatic demonstration of the the programme



Annex 4 : Digital Technology Solutions Professional Programme : End-point Assessment (EPA)



Annexe 5: Notes on completing programme specification templates

1 **-** This programme specification should be mapped against the learning outcomes detailed in module specifications.

2 – The expectations regarding student achievement and attributes described by the learning outcome in section 3 must be appropriate to the level of the award within the **QAA frameworks for HE qualifications**: http://www.qaa.ac.uk/AssuringStandardsAndQuality/Pages/default.aspx

3 – Learning outcomes must also reflect the detailed statements of graduate attributes set out in **QAA subject benchmark statements** that are relevant to the programme/award: http://www.qaa.ac.uk/AssuringStandardsAndQuality/subject-guidance/Pages/Subject-benchmark-statements.aspx

4 – In section 3, the learning and teaching methods deployed should enable the achievement of the full range of intended learning outcomes. Similarly, the choice of assessment methods in section 3 should enable students to demonstrate the achievement of related learning outcomes. Overall, assessment should cover the full range of learning outcomes.

5 - Where the programme contains validated **exit awards** (e.g. CertHE, DipHE, PGDip), learning outcomes must be clearly specified for each award.

6 - For programmes with distinctive study **routes or pathways** the specific rationale and learning outcomes for each route must be provided.

7 – Validated programmes delivered in **languages other then English** must have programme specifications both in English and the language of delivery.