

Programme specification

(Notes on how to complete this template are provide in Annexe 3)

1. Overview/ factual information

Programme/award title(s)	BSc (Hons) in Digital & Technology Solutions (Software Engineer)
Teaching Institution	University Centre Calderdale College
Awarding Institution	The Open University (OU)
Date of first OU validation	September 2020
Date of latest OU (re)validation	September 2020
Next revalidation	September 2023
Credit points for the award	360
UCAS Code	N/A
JACS Code	Not used
Programme start date and cycle of starts if appropriate.	September 2020
Underpinning QAA subject benchmark(s)	QAA Subject Benchmark Statement: Computing (4 th Ed., 2019)
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 IfA&TE Digital & Technology Solutions Professional (Integrated Degree) Assessment Plan (undated) QAA Characteristics Statement 'Higher Education in Apprenticeships' (July 2019) *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) *see Course Handbook for pandemic viruses' (i.e. Covid-19) requirements and expectations
Duration of the programme for each mode of study	Typically 4 years
Dual accreditation (if applicable)	N/A
Date of production/revision of this specification	September 2020

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical apprentice 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 apprentice module guide(s) and the Apprentice Handbook (including institutionally recognised current best-practices regarding Covid-19 quarantine restrictions).

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 (DaTS) integrates workplace and academic learning and provides the opportunity for apprentices to develop personal and professional competence within their chosen specialism.

The award provides DaTS 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 a critical and reflexive awareness of professional self, as well as a sense of potential career trajectory. The programme will also afford an impetus for continuous lifelong learning. The design of the programme has been aligned with specifications for the new T levels in Digital which the College will be delivering from September 2021 to enhance progression opportunities from these programmes.

The BSc (Hons) in Digital & Technology Solutions is mapped against the:
The Institute for Apprenticeships & Technical Education (IfA&TE) Digital & Technology Solutions Professional (Integrated Degree) Occupational Standard, ST0119;
IfA&TE Digital & Technology Solutions Professional (Integrated Degree) Assessment Plan (undated);
QAA Subject Benchmark Statement: Computing (4th Ed., 2019);
QAA Characteristics Statement 'Higher Education in Apprenticeships' (July 2019).

All apprentices on this course will be employed by a sponsoring organisation and can study part-time for a typical duration of 4 years. Delivery will be flexible to meet the needs of local and regional employers and apprentices.

The Digital and Technology Solutions (DaTS) apprenticeship will capitalise on the wealth of apprenticeship experience within the University Centre and College. Calderdale College is the largest work-based learning provider in Calderdale and was awarded Outstanding for apprenticeships in the 2018 Ofsted report. The course also sits well with the University Centre's aim to provide learning and development programmes that effectively widen participation in higher education and enable graduates to progress into professional roles and make a meaningful contribution to the local and regional

economy. The College is a learning organisation where apprentices are not passive consumers but actively construct their learning in partnership with staff, support teams and each other; the DaTS award will extend this partnership to include a collaborative relationship between the apprentice, the employer (primarily through a workplace mentor) and the University Centre.

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 moves from a relatively broad scope at Level 4 to more and more 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:

- Provide a flexible programme that meets the needs of local and regional apprentices and employers;
- Develop graduate apprentices with recognised digital and technology skills;
- Develop in apprentices the necessary critical awareness to challenge personal values, assumptions and beliefs, combined with an open minded attitude that is responsive to change in order to enhance their current roles, take on new responsibilities and pursue lifelong learning;
- Provide deep understanding and appreciation of the challenges and opportunities afforded by contemporary digital industries and environments;
- Develop self-aware, reflexive and inclusive critical practitioners who are capable of delivering measurable success in rapidly evolving industry environments;
- Provide a context for apprentices to engage with key ethical, legislative and sustainability issues, developing digital and technology solutions for contemporary business.

Objectives

In order to meet the aims of the programme apprentices will be able to:

- Demonstrate a broad knowledge base and understanding of digital and technology issues relating to organisational context;
- Critically able to evaluate, orientate and act upon current subject-specific debates, practices and approaches;
- Critically review and consolidate appropriate information and a body of knowledge, using it to plan and develop processes that address complex problems in contemporary digital business environments;
- Demonstrate relevant workplace skills, including: planning, risk management, project and budget management, software tools production, entrepreneurialism, creative approaches to drive customer

service, effective communication and people management, team building, and decision-making skills;

- Reflect critically on and accept accountability for personal and team performance, developing appropriate ongoing personal and professional development plans.

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)

The BSc (Hons) in Digital & Technology Solutions had no direct relationships with any other awards.

External examiner visits and exam board arrangements will continue to be completed on a semestral basis. However, the constituent modules for each stage will be undertaken over the course of three semesters in levels 5 and 6 (rather than the usual two). This means that the pass/proceed Board for stage 1 (Level 4) will take place at the end of Semester 2, Year 1; pass/proceed Board for stage 2 (Level 5) will be at the end of Semester 1, Year 3. Final classifications will be awarded at the end of Semester 2, Year 4.

In Year 1, apprentices will complete all six Level 4 modules within one year, while Level 5 and Level 6 modules are completed over 1.5 years each. However, semester 2 marks will be reported at the September Board of Examiners meeting, giving apprentices a full calendar year to complete this work. It is anticipated that this will be manageable for apprentices as they will be less heavily involved in specific projects in the workplace due to their relative junior status and level of expertise.

Exam Board Schedule – September Start in level 4					
Year	Semester	Modules Studied	Modules Assessed	Credits going forward to Board of Examiners	Board of Examiners (final dates TBC)
Year 1	Semester 1 (semester A of overall programme)	4.1 4.2 4.4	4.1 4.2	20 20	Feb 2021 Semester 1 marks (4.1, 4.2)
	Semester 2 (semester B of overall programme)	4.3 4.4 4.5 4.6	4.3 4.4 4.5 4.6	20 20 20 20	Sept 2021 board for Sem. 2 marks (4.3, 4.4, 4.5,4.6) pass/proceed
Year 2	Semester 1 (semester C of overall programme)	5.1 5.5	5.1	20	Feb 2022 Y 2 Semester 1 marks (5.1)
	Semester 2 (semester D of overall programme)	5.3 5.4 5.5	5.3 5.4 5.5	20 20 20	July 2022 Y 2 Semester 2 marks (5.3, 5.4, 5.5)
Year 3	Semester 1 (semester E of overall programme)	5.2 5.6	5.2 5.6	20 20	Feb 2023 Y3 Sem. 1 marks (5.2, 5.6) pass/proceed
	Semester 2 (semester F of overall programme)	6.1 6.3	6.1	30	July 2023 Y3 Sem 2 marks (6.1) Y3 Sem 1
Year 4	Semester 1 (semester G of overall programme)	6.2 6.3	6.2 6.3	30 20	Feb 2024 Yr4 Sem 1 marks (6.2, 6.3)
	Semester 2 (semester H of overall programme)	6.4 Synoptic	6.4	40	July 2024 Y4 Sem 2 marks (6.4) and final award E.P.A. Sept. 2024 reconvened board for Y4 Sem. 2 resists and final award

Exam Board Schedule – January Start in level 4					
Year	Semester	Modules Studied	Modules Assessed	Credits going forward to Board of Examiners	Board of Examiners (final dates TBC)
Year 1	Semester 1 (semester A of overall programme)	4.1 4.4 4.6 4.5	4.1 4.4 4.6 4.5	20 20 20 20	July 2021 Semester 1 marks (4.1, 4.2)
	Semester 2 (semester B of overall programme)	4.2 4.3	4.2 4.3	20 20	Feb 2022 board for Sem. 2 marks (4.3, 4.4, 4.5,4.6) pass/proceed Reconvened board TBC
Year 2	Semester 1 (semester C of overall programme)	5.3 5.4 5.5	5.3 5.4 5.5	20 20 20	July 2022 Y 2 Semester 1 marks (5.1)
	Semester 2 (semester D of overall programme)	5.1 5.2	5.1 5.2	20 20	Feb 2023 Y 2 Semester 2 marks (5.3, 5.4, 5.5)
Year 3	Semester 1 (semester E of overall programme)	5.6	5.6	20	July 2023 Y3 Sem. 1 marks (5.2, 5.6) pass/proceed
	Semester 2 (semester F of overall programme)	6.1 6.3	6.1	30	February 2024 Y3 Sem 2 marks (6.1) Y3 Sem 1
Year 4	Semester 1 (semester G of overall programme)	6.2 6.3	6.2	20	July 2024 Yr4 Sem 1 marks (6.2, 6.3)
	Semester 2 (semester H of overall programme)	6.4 Synoptic	6.3 6.4	30 40	February 2025 Y4 Sem 2 marks (6.4) and final award E.P.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 4 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 recommendations to working methods within their workplace. More specifically, at each level (4, 5, 6) the modules that are directly work-integrated include: '4.3 Introduction to Business Systems and Processes', '5.2 Industry in Context' and '6.2 Developing a Digital Business'.

In order to progress to the Gateway to EPA, apprentices will be required to complete and pass their formative modules developed throughout the degree. Apprentices will also be required to demonstrate achievement of level 2 (or above) English and Maths. The EPA itself will consider the Synoptic Project, 20-30m presentation and 10-20m Viva, as well as the overall formative Learning Portfolio (with Lvl6 modules, which must include the Synoptic Project, presentation and viva double-weighted), to afford apprentices opportunity to clearly demonstrate the requires skills, knowledge and behaviours to meet the defined Standards required and thus gain the final 'Digital and Technology Solutions' degree and Apprenticeship Certificate: 'Digital & Technology Solutions' BSc(hons) award.

2.4 List of all exit awards

Level 4 (120 credits, level 4): Cert (HE) Digital & Technology Solutions
Level 5 (240 credits: 120 level 4, 120 level 5): Dip (HE) Digital & Technology Solutions
Level 6 (320 credits: 120 level 4, 120 level 5, 80 level 6): BSc Digital & Technology Solutions (Software Engineer), BSc Digital & Technology Solutions (Testing Engineer), BSc Digital & Technology Solutions (Cloud Engineer)

Level 6 (360 credits: 120 level 4, 120 level 5, 120 level 6): BSc (Hons) Digital & Technology Solutions (Software Engineer), BSc (Hons) Digital & Technology Solutions (Testing Engineer), BSc (Hons) Digital & Technology Solutions (Cloud Engineer)

3. Programme structure and learning outcomes

Programme Structure - LEVEL 4						
Compulsory modules	Credit points	Optional modules	Credit points	Is module compensatable?	For September starts semester runs in (see table in section 2.2)	For January starts semester runs in
4.1 Introduction to Academic and Professional Skills	20	<i>None</i>		Yes	A	A
4.2 Introduction to Computing and Digital Systems	20			Yes	A	B
4.3 Introduction to Business Systems and Processes	20			Yes	B	B
4.4 Introduction to Web Development	20			Yes	A-B	A
4.5 Introduction to Object Oriented Programming	20			Yes	B	A
4.6 Introduction to Maths and Algorithms for Computing	20			Yes	B	A

Learning Outcomes – LEVEL 4	
3A. Knowledge and understanding	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>KU1: To demonstrate familiarity with foundational digital technology theories, principles and practices of the discipline</p> <p>KU2: To demonstrate basic awareness of models, languages and techniques to assess digital technologies and systems</p> <p>KU3: To evidence understanding in aspects of your employer’s business systems lifecycles.</p>	<p>Knowledge and understanding is developed through a combination of methods, including: lectures, seminars and self-directed study using library resources and virtual learning environment.</p> <p>Learning will be applied to the organisational context and apprentices will be supported by a workplace mentor, in addition to</p>

Learning Outcomes – LEVEL 4	
3A. Knowledge and understanding	
<p>KU4: To identify some of the legal, ethical and social expectations for development of digital systems</p> <p>KU5: To demonstrate awareness of contemporary computing technology developments and their potential implications.</p>	<p>regular formative feedback and summative review of work-integrated learning and assessment by course and module tutors.</p> <p>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.</p> <p>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. Where practicable, live briefs will be negotiated through tripartite agreement between workplace, apprentice and module tutor, these opportunities are identified throughout the module specifications for the course.</p>

3B. Cognitive skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>CS1: To evidence the application of computational thinking towards evaluating digital systems in I.T. business environments.</p> <p>CS2: To apply appropriate fundamental computing concepts in relevant business workplace environments.</p>	<p>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 Business Research project.</p>

3B. Cognitive skills	
<p>CS3: To evaluate frameworks and assessment approaches to extend your own professional performance.</p> <p>CS4: To identify specifications and implementations for industry-standard digital business systems.</p> <p>CS5: To apply computing techniques and technological tools for simple problem-solving and modelling; developing digital solutions in the context of your discipline.</p> <p>CS6: Through work-related project work, demonstrate a basic awareness of the integration of technical competence, industry practice and the business context.</p>	<p>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 practice.</p> <p>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.</p>

3C. Practical/ professional skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>PS1: To demonstrate emerging technological skills and computing competencies.</p> <p>PS2: To research and evaluate simple testing and simulation environments, modelling tools and techniques.</p> <p>PS3: To appropriately plan and structure work; keeping records of ongoing progress and outcomes.</p> <p>PS4: To consider methods that identify personal strengths and weaknesses in your knowledge, training and skills; for personal and professional development.</p> <p>PS5: To demonstrate the personal competency required to undertake ongoing learning in industry relevant digital technologies.</p> <p>PS6: To identify relevant professional, ethical, social and legal issues that may arise in the use of digital systems.</p>	<p>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 mentors and line management 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.</p> <p>Assessment methods will be appropriate to the particular module but include tutor assessment of observed activities and written</p>

3C. Practical/ professional skills	
<p>PS7: To demonstrate awareness of appropriate professional tools to support your work.</p> <p>PS8: To show awareness of enterprise and/or entrepreneurship opportunities, within the broad area of computing and/or your specialist field.</p>	<p>work. All practical work is linked to a range of methods for evaluating the work and demonstrating understanding of the underlying theories.</p>

3D. Key/ transferable Skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>KS1: To communicate written information and ideas, for a range of potential audience, which could include workplace colleagues and other business environments.</p> <p>KS2: To demonstrate an ability to work as part of a team in business environments; actively listening, respecting difference and communicating effectively.</p> <p>KS3: To demonstrate effective self-management abilities; implementing appropriate study skills for lifelong learning.</p> <p>KS4: To conduct basic research, with primary and secondary sources, demonstrating effective information-retrieval skills.</p> <p>KS5: To consider, select and apply suitable numerical and/or algorithmic solutions; to resolve mathematical problems.</p> <p>KS6: To recognise technological proposals for business needs that reflect the use of open questions.</p> <p>KS7: To make concise and clear verbal presentations</p>	<p>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.</p> <p>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.</p> <p>Key and generic graduate skills are embedded in the tasks for all modules and are included on the grading criteria for the assessment of all modules.</p> <p>The teaching methods include: lectures, workshops, formative feedback on written work and presentations. Apprentices are able</p>

3D. Key/ transferable Skills	
	to access, on demand or through referral, additional learning support for communication skills with the academic skills support available.

<u>Programme Structure - LEVEL 5</u>						
Compulsory modules	Credit points	Specialist modules	Credit points	Is module compensatable?	For September starts semester runs in (see table in section 2.2)	For January starts semester runs in
5.1 Software Development Lifecycle	20			Yes	C	D
5.2 Industry in Context	20			Yes	E	D
5.3 Applied Object Oriented Programming	20			Yes	D	C
5.4 Applied Web Systems and Technologies	20			Yes	D	C
5.5 Data Management for Business Environments	20			Yes	C-D	C
5.6 Cloud and Mobile Development Software	20			Yes	E	E

<u>Learning Outcomes – LEVEL 5</u>	
3A. Knowledge and understanding	
Learning outcomes:	Learning and teaching strategy/ assessment methods

Learning Outcomes – LEVEL 5	
3A. Knowledge and understanding	
<p>KU1: To demonstrate knowledge in foundational computing and digital technology theories, principles, practices and solutions.</p> <p>KU2: To evidence understanding of models, languages and techniques to assess, develop and evaluate digital technologies and systems.</p> <p>KU3: To comprehend and compare fundamental aspects of your employers' business systems lifecycles; including requirements, specifications, security, testing, implementation, maintenance, and human interaction.</p> <p>KU4: To demonstrate awareness in a range of the legal, ethical and social expectations for development of digital systems in business environments</p> <p>KU5: To evidence knowledge of contemporary computing and technology developments and their potential application.</p>	<p>Knowledge and understanding will be developed through a combination of methods, including: lectures, seminars and self-directed study using library resources and the virtual learning environment.</p> <p>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.</p> <p>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.</p> <p>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. 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.</p>

3B. Cognitive skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods

3B. Cognitive skills	
<p>CS1: To identify the application of computational thinking when developing digital systems for I.T. business environments.</p> <p>CS2: To analyse, evaluate and deploy appropriate fundamental computing concepts and technological solutions for the workplace.</p> <p>CS3: To utilise and evaluate the effectiveness of industry frameworks and assessment approaches to extend your own professional performance.</p> <p>CS4: To research, analyse and compare the specifications and implementations of digital technology business systems.</p> <p>CS5: To apply a range of computing techniques and technological tools for problem-solving and modelling; developing digital solutions in the context of your work.</p> <p>CS6: To consider, propose and develop a small project in your workplace that applies and extends your critical competencies, reflecting on the processes involved.</p>	<p>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 Business Research project.</p> <p>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 practice.</p> <p>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.</p>

3C. Practical and professional skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>PS1: To present awareness of appropriate specialist knowledge, technological skills and computing competencies in your chosen field.</p> <p>PS2: To research and evaluate testing and simulation environments, their modelling tools and techniques.</p> <p>PS3: To appropriately plan and structure work; keeping records of ongoing progress and outputs.</p>	<p>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</p>

3C. Practical and professional skills	
<p>PS4: To research, reflect and consider methods that identify personal strengths and weaknesses in your knowledge, training and skills; for personal and professional development.</p> <p>PS5: To demonstrate the personal competency required to maintain currency of learning in industry relevant digital technologies.</p> <p>PS6: To identify and propose solutions to the legal, ethical, social and professional issues in relation to the workplace development of digital systems.</p> <p>PS7: To incorporate relevant specialist tools for professional practice.</p> <p>PS8: To propose and plan enterprise and/or entrepreneurship opportunities, within the broad area of computing and/or your specialist field.</p>	<p>modules. It is anticipated that apprentices off the job and work integrated learning will also play a significant role in the development or practical and professional skills.</p> <p>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.</p>

3D. Key/transferable skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>KS1: To communicate written information, proposals, ideas and problems; clearly articulating issues for a range of audience, which could include workplace colleagues and other business environments.</p> <p>KS2: To work 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</p>	<p>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.</p> <p>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</p>

3D. Key/transferable skills	
<p>KS3: To demonstrate flexible, and reflective self-management abilities; monitoring and implementing appropriate study skills for lifelong learning</p> <p>KS4: To conduct appropriate research, utilising a small range of primary and secondary sources; for I.T. and business projects</p> <p>KS5: To consider, select and apply from a range of suitable numerical, algorithmic and/or analytical solutions; to resolve technological problems</p> <p>KS6: To propose, demonstrate, and gain supporting commitment towards designing technological solutions for business needs that demonstrate the use of open questions and negotiation skills</p> <p>KS7: To make concise and engaging verbal presentations, including arguments and explanations</p>	<p>practice used within individual workplaces will also be integrated into the working methods considered.</p> <p>Key and generic graduate skills are embedded in the tasks for all modules and are included on the grading criteria for the assessment of all modules.</p> <p>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.</p>

Programme Structure - LEVEL 6						
Compulsory modules	Credit points	Optional modules	Credit points	Is module compensatable?	For September starts semester runs in (see table in section 2.2)	For January starts semester runs in
6.1 Business Architectures, Services & Communications	30	6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2	20	No	F	F
6.2 Developing a Digital Business (Continued into Year 4)	30			No	F-G	G
6.4 Synoptic Project	40			No	H	H

Learning Outcomes – LEVEL 6

3A. Knowledge and understanding

Learning outcomes:

- KU1:** To apply and describe detailed knowledge in foundational computing and digital technology theories, principles, practices and solutions.
- KU2:** To demonstrate awareness in a broad range of supporting models, languages and techniques that assess, develop and critically evaluate digital technologies and systems.
- KU3:** To show an informed, critical understanding in fundamental aspects of your employers' systems lifecycles; including requirements, specifications, limitations, security, testing, implementation, maintenance and human interaction.
- KU4:** To identify, evaluate and implement knowledge of the ethical, social and legal issues for the development of professional digital systems, and how these are managed within your own business environment.
- KU5:** To demonstrate critical awareness of contemporary computing and technological developments, as well as their potential industry application and implications.

Learning and teaching strategy/ assessment methods

Knowledge and understanding will be developed through a combination of methods, including: lectures, seminars and self-directed study using library resources and the virtual learning environment. An increased focus on criticality will be developed throughout the level programme.

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.

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. 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
<p>CS1: To consider and identify the application of computational thinking when describing and producing digital solutions in I.T. business environments.</p> <p>CS2: To investigate, interpret and implement key computing concepts in a range of contexts including your work environment.</p> <p>CS3: To critically appraise relevant industry frameworks and assessment approaches to extend and improve your own professional performance.</p> <p>CS4: To analyse, compare, critique and contribute towards workplace specifications and implementations for digital technology business systems.</p> <p>CS5: To source, select, and synthesise appropriate techniques and diagnostic tools for abstracting, modelling & problem-solving; constructing and testing digital systems for the workplace; demonstrating awareness and reflection in a range of the technological limitations involved.</p> <p>CS6: To devise, develop and produce a project in your workplace that applies and extends your knowledge, understanding and competencies, reflecting critically on the processes involved, as well as outcomes of your work.</p>	<p>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 Business Research project.</p> <p>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 practice.</p> <p>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.</p>

3C. Practical and professional skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>PS1: To present awareness of the required skills and computing competencies appropriate for your level of study, relating to your chosen specialist field.</p> <p>PS2: To research, design, and evaluate testing strategies for digital systems, utilising a range of simulation environments, modelling tools and techniques.</p> <p>PS3: To appropriately plan, structure and organise work; keeping shared records and backups of ongoing progress and outputs, clearly and systematically.</p> <p>PS4: To analyse, reflect and consider methods to identify personal strengths, weaknesses and opportunities in your knowledge, training and skillsets; proposing appropriate solutions for personal and professional development.</p> <p>PS5: To demonstrate the personal competency required to undertake experimental learning in industry relevant digital technologies.</p> <p>PS6: To show critical awareness in and the implementation of appropriate solutions for, the legal, ethical, social and professional issues related to workplace development and delivery of digital systems.</p> <p>PS7: To make use of a range of relevant specialist tools for professional practice.</p> <p>PS8: To demonstrate enterprise and/or entrepreneurship abilities, within the broad area of computing and/or your specialist field.</p>	<p>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.</p> <p>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.</p> <p>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.</p>

3D. Key/transferable skills	
Learning outcomes:	Learning and teaching strategy/ assessment methods
<p>KS1: To 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</p> <p>KS2: To 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</p> <p>KS3: To demonstrate flexible, reflective and effective self-management abilities; planning, monitoring, and implementing appropriate study skills for lifelong learning</p> <p>KS4: To conduct appropriately detailed research, utilising a range of primary and secondary sources, media and technologies; for I.T. and business projects</p> <p>KS5: To critically consider, select and apply from a broad range of suitable numerical, algorithmic and/or analytical solutions; to resolve technological problems</p> <p>KS6: To propose, demonstrate value in, and gain supporting commitment towards constructing technological solutions for business needs that demonstrate the use of open questions, summative approaches and negotiation skills</p> <p>KS7: To make concise, engaging and well-structured verbal presentations, including critical arguments and conclusive explanations</p>	<p>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.</p> <p>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.</p> <p>Key and generic graduate skills are embedded in the tasks for all modules and are included on the grading criteria for the assessment of all modules.</p> <p>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.</p>

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 apprentices 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

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 knowledge throughout the level 4 modules. These specific vocational roles are from one of three currently validated pathways: Software Engineer, Testing Engineer, and Cloud Engineer.

This approach affords clear pathways to provide the commencement of detailed knowledge, skills and behaviours to be gained in the specific rigors of each specialist role. This will include initial analyses, design, deploying and maintaining digital systems, with a range of potential approaches considered, including high-level architectures, exploring choices of test and evaluation strategies, with a range of technological tools. Apprentices will equally reflect on how each specialism requires considerations outside of programming alone; including details such as quality, time management, economic goals and risk factors.

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 Certificate: Digital & Technology Solutions. Attainment of the apprenticeship requires apprentices to successfully complete several assessments throughout their BSc (Hons) Digital and Technology Solutions, with methods and outcomes across the 4 years ensuring achievement of the apprenticeship standard.

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

In order to progress to the Gateway to EPA, apprentices will be required to have completed and passed their BSc Digital and Technology Solutions, including the work-based projects and portfolio developed throughout the degree.

Apprentices will also be required to demonstrate achievement of level 2 (or above) English and Maths.

The EPA itself will consider the Synoptic Project, 20-30m presentation and 10-20m Viva, as well as the overall formative Learning Portfolio (with Lvl6 modules, which must include the Synoptic Project, presentation and viva double-weighted), to afford apprentices opportunity to clearly demonstrate the requires skills, knowledge and behaviours to meet the defined Standards required and thus gain the final Bsc(hons) 'Digital and Technology Solutions' degree and Apprenticeship Certificate: 'Digital & Technology Solutions' awards.

5. Support for apprentices and their learning.

(For apprenticeships this should include details of how apprentice 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, ensuring apprentices feel apprentices are regarded and supported as individuals on their programme - 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 such. The use of a small academic programme and support team will also help apprentices get to know staff well.

Apprentices will also be allocated a College Personal Tutor, who will be a member of the teaching team and involved with induction activities, and a named Training Officer (employed by institution to liaise with employer and apprentices), with monthly site visits and meetings, as well as Progress Coach (first point of contact for pastoral and learning support). Personal tutors and progress coaches will provide both academic and pastoral support to apprentices, with initial meetings held during induction and regularly thereafter (at least once per semester, more often if individuals have an identified need or if a meeting is requested). Notes will be recorded on Promonitor (external student management system) and will be available to the apprentice, including any agreed actions or targets. Personal tutors also monitor apprentice attendance and, where appropriate, make contact to discuss any issues.

Apprentices requiring levels of pastoral support beyond that provided by their Personal Tutor, Progress Coach or Training Officer may be referred to

appropriate specialists in Learner Services, for example, Apprentice Counsellors. Apprentices who are 'at risk' academically are directed towards the most appropriate advice and support; this is usually Academic Skills Support, but apprentices may be referred to other specialists and information available within the College, through the allocated Training Officer, or workplace mentor and/or Line Manager.

Learning and support needs will be easily identified through the Individual Learning Plan (ILP) that apprentices are required to maintain and periodically submit throughout the programme. Apprentices will also be supported in the development of an individual Learning Portfolio, demonstrating application of the programme knowledge and understanding, skills and behaviours in the work environment. 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 College tutor.

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 exemplar 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.

The College will support workplace mentors through a one-day induction at both starts of each academic year. This induction will include an introduction to the requirements of the degree apprenticeship in terms of time, resources and opportunity, in addition to the support and mentoring of apprentices and the sharing of information between all three parties. Workplace mentors will be guided through quality assurance aspects and the delineation of roles between Workplace Mentor, College Tutor(s), Course Leader, Training Officer, Progress Coach and the Apprentice themselves.

The employer must also provide the following support;

- A work-based mentor (see above for College support of such);
- 20% off-the-job training across the apprenticeship. This must be during employed time, but is to involve learning outside normal daily work and might include, for example: training courses, role-plays, working on VLE materials, industry visits, shadowing, mentoring, time spent on assignments and project development.
- Regular performance reviews of work-based learning

6. Criteria for admission

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

In order to be considered for the programme, applicants must be employed. The programme is designed for those in full-time work. Assessment is work-based and employers must be committed to providing a role that allows personal development, with opportunity to practice and evidence new learning and skills. Employers must also provide 20% off-the job training, within normal working hours.

Applicants would normally be expected to have:

1. Level 2 Maths and English; and
2. 64 UCAS Tariff points, from the following:

A Levels (one of which to be Computer Science and/or Maths) - CC
BTEC Level 3 (Computing or a related subject) – MMM / MM

Access to Higher Education Diploma Computer Science – Pass.

Or other equivalents including apprenticeship pathways at level 3.

Mature applicants will be considered on a case-by-case basis.

Admissions for twice yearly 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.

All applicants must complete a satisfactory College interview as part of the admissions process and would be expected to aim to become professional managers. Applicants should not already hold a degree in a related subject.

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.

All programmes of study are conducted and assessed in the English language. Hence, applicants seeking admission are expected to be able to communicate effectively in the English language. Suitably qualified overseas applicants may be required to evidence this by achieving a minimum of International English Language Testing System (IELTS 6.0) or Test of English as a Foreign Language (TOEFL: 550 or equivalent).

All applicants are subject to the same criteria and selection procedure whether apprentices are apprentices progressing internally within the College or external applicants.

7. Language of study

English

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

Assessments on this programme vary with each module. For each module there are two forms of assessment – the first being formative. A possible example of formative assessment could include a draft or part of your work, a presentation of your ideas that can be assessed by a module tutor to give guidance on how you are achieving the aims and outcomes for each module, or an informal assessment in elements of summative submissions that could also be carried out within class, or by independent study. These formative assessments will not be marked but you will be given verbal or written feedback in order to make any amendments before you submit the final piece of work for the final summative assessment.

Full details of the deadline dates for all assessments will be provided by module tutors and will be clearly outlined in the student handbook.

The assessments are marked with reference to the module outcomes outlined in each module specification and assignment brief.

Methods and regulations of assessment.

Modules are assessed continuously by the submission of coursework assignments at regular intervals across the year. The programme team provide assignment briefings that include a description of the task, the learning outcomes and the assessment criteria, plus clear indications concerning the modes of assessment and marking and grading practices.

All written work must be submitted electronically through the agreed interface, whether this is via College VLE (Moodle) or Github-Classroom for more substantial and/or code-based submissions. It is then marked by the tutor, or tutors, responsible for delivery of the module. A sample is then second marked by another tutor. Submissions close to the grade boundaries may be marked a third time. A sample across all classifications is made available to the external examiner at the end of each semester.

The penalty for late submission (without accepted mitigating/extenuating circumstances) is a 10% reduction deducted from the overall marked score for each working day late (excluding weekends, bank holidays and College shut

down dates), down to the 40% pass mark and no further. On the seventh day, the submission is refused and a mark of zero will be applied.

All formal written assignments should normally be word processed. The Harvard reference system is to be used and support is provided for apprentices who are not familiar with this. Assessments are planned with best effort to avoid congestion at the end of the semester.

Feedback on Assessment

Both oral and written formative and summative assessments will support you to reflect on your progress. Written summative feedback will normally be provided within four weeks of the completion of an assignment.

Much of the programme is continually assessed in terms of the developmental process. This provides an opportunity for continual formative feedback and discussion with tutors (formally and informally) however, this feedback is not formally recorded or tracked. You are also encouraged to give feedback to your peers and engage in on going self-assessment, informal peer assessment and discussion.

Apprentices are encouraged to obtain formative feedback of assessments from their tutors during scheduled meetings and timetabled sessions, in addition to, or including any draft submissions.

Following successful completion of all formative modules, UCCC will organise the end-point assessment (EPA). The EPA itself will consider the Synoptic Project, 20-30m presentation and 10-20m Viva, as well as the overall formative Learning Portfolio (with Lvl6 modules, which must include the Synoptic Project, Presentation and Viva double-weighted), to afford apprentices opportunity to clearly demonstrate the requires skills, knowledge and behaviours to meet the defined Standards required and thus gain the final Bsc(hons) 'Digital and Technology Solutions' degree and Apprenticeship Certificate: 'Digital & Technology Solutions' awards.

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)

Successful completion of the BSc degree element is an essential part of the Gateway to end-point assessment. Assessments completed throughout the degree are designed to assess apprentice knowledge, skills and behaviours against the Standard. These are evidenced in the Portfolio and managed through an ongoing individual learning plan (ILP). A final level Project (the Synoptic Project) will comprise a substantive (6 month) piece of work with individual research, design and successful implementation in the workplace.

The EPA itself will consider the Synoptic Project, 20-30m presentation and 10-20m *viva voce*, as well as the overall formative Learning Portfolio (with Lvl6 modules, which must include the Synoptic Project, presentation and viva

double-weighted), to afford apprentices opportunity to clearly demonstrate the requires skills, knowledge and behaviours to meet the defined Standards required and thus gain the final BSc (hons) 'Digital and Technology Solutions' degree and Apprenticeship Certificate: 'Digital & Technology Solutions' awards.

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:

- An annual Programme Leader Report and associated action plan. The report is informed by the annual course review, external examiner reports, programme team responses and apprentice feedback
- Apprentice feedback, which is collected in a variety of ways including module evaluations and focus groups. These also feed into bi-annual enhancement and development meetings, at which the apprentice programme representative is present. The feedback loop is typically closed quickly through the apprentice representative and/ or programme leader. Where matters cannot be resolved immediately apprentices are appraised by the programme leader, who will also flag issues at University Centre of College level as appropriate. This highlights the strength and influence of the apprentice voice.
- Apprentice surveys such as the NSS are reviewed at the end of the year in processes such as the SED and the College Annual Review.
- Staff development events aimed at improved teaching and learning, attended by academic staff.
- The sharing of best practice through the HE Forum.
- 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, termly, observations and a minimum of one longer lesson observation during each academic year. Where areas for improvement are identified, an advanced learning practitioner 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

Not applicable

Annexe 1: Curriculum map

Annexe 1a: Assessment Components Map

Annex 2 : Map of Assessment Types

Annexe 3: Curriculum mapping against the apprenticeship standard or framework

Annexe 4: Notes on completing the OU programme specification template

Annexe 1 - Curriculum map

Level	Study module/unit	Programme Outcomes																												
		KU1	KU2	KU3	KU4	KU5		CS1	CS2	CS3	CS4	CS5	CS6		PS1	PS2	PS3	PS4	PS5	PS6	PS7	PS8		KS1	KS2	KS3	KS4	KS5	KS6	
4	Introduction to Academic and Professional Skills				x					x							x	x		x	x	x		x		x	x		x	
	Introduction to Computing and Digital Systems					x		x			x		x		x		x				x						x	x		
	Introduction to Business Systems and Processes			x	x				x		x		x					x		x		x			x	x				x
	Introduction to Web Development	x	x	x		x		x	x						x				x		x						x	x		
	Introduction to Object Oriented Programming	x	x			x		x					x		x		x	x		x							x		x	
	Introduction to Maths and Algorithms for Computing	x						x			x		x			x	x				x						x	x	x	

Level	Study module/unit	Programme Outcomes																													
		KU1	KU2	KU3	KU4	KU5		CS1	CS2	CS3	CS4	CS5	CS6		PS1	PS2	PS3	PS4	PS5	PS6	PS7	PS8		KS1	KS2	KS3	KS4	KS5	KS6	KS7	
5	Software Development Lifecycle	x	x					x				x	x			x	x				x							x		x	
	Industry in Context			x	x								x					x		x		x			x	x	x			x	x
	Applied Object Oriented Programming		x			x		x		x		x						x	x		x					x			x		
	Applied Web Systems and Technologies	x			x				x		x					x	x	x			x				x			x			
	Data Management for Business Environments			x	x						x	x								x	x					x			x		x
	Specialist Module (x 1)			x		x			x					x				x				x	x				x			x	

Level	Study module/unit	Programme Outcomes																												
		KU1	KU2	KU3	KU4	KU5		CS1	CS2	CS3	CS4	CS5	CS6		PS1	PS2	PS3	PS4	PS5	PS6	PS7	PS8		KS1	KS2	KS3	KS4	KS5	KS6	KS7
6	Business Architectures, Services & Communications		x	x		x				x		x				x				x	x					x		x		
	Developing a Digital Business			x	x					x		x		x					x		x			x	x				x	x
	Specialist Module (x 1)		x			x			x	x	x	x						x	x		x			x				x	x	x
	Synoptic Project	x			x	X		x							x		x	x		x				x	x	x	x	x	x	x

DaTS BSc(hons) Degree Apprenticeship Assessed Components Map

Word Counts and Equivalent Word Counts at Levels 4, 5 & 6

Level	Word count per 20 credit module	What is being assessed:
Level 4 – Cert (HE) Digital & Technology Solutions	3,000 words or equivalent	Communicate basic concepts, verbally and in writing for a range of audience; interpret information to propose simple technological solutions; develop and reflect on learning skills, knowledge and behaviours that extend personal and professional development; demonstrate team-working ability; apply computational thinking towards digital system solutions; demonstrate simple problem-solving skills towards modelling and developing small-scale coding projects; recognise the application of I.T. within business environments.
Level 5 – Dip (HE) Digital & Technology Solutions	4,000 words or equivalent	Clearly communicate concepts, verbally and in writing for a range of audience, utilising appropriate processes and platforms; interpret information from a range of sources to implement technological solutions in the workplace; demonstrate reflective and developing project-based skills, knowledge and behaviours that evidence personal and professional competence; demonstrate the inter-personal aptitudes required for effective team-working within the workplace; apply computational thinking toward developing, deploying and maintaining digital system solutions; demonstrate problem-solving skills when modelling, testing and developing codebases for technological solutions; Identify the context and application of I.T. within business environments.
Level 6 – BSc (Hons) Digital & Technology Solutions	5,000 words or equivalent	Clearly communicate complex concepts, verbally and in writing for a range of audience, utilising appropriately detailed processes and platforms; interpret and apply information from a range of primary and secondary sources to implement complex technological solutions in the workplace; demonstrate reflective self-management when developing skills, knowledge and behaviours that evidence personal and professional competence in the workplace; demonstrate the inter-personal aptitudes required to effectively engage with a range of staff within the workplace; analyse, critique and apply computational thinking when developing, deploying and maintaining digital system solutions; demonstrate applied problem-solving skills for modelling, testing, developing and maintaining digital system solutions; Identify the context and demonstrate Enterprise/entrepreneurial ability, within I.T. business environments.

The following table summarises the word equivalence for non-standard assessment details:

NON-STANDARD ASSESSMENT DETAILS	WORD EQUIVALENCE
Level 4	
Digital Portfolio Artefact (online content management)	1000 words
Technical Assessment (test)	750 words
Technical Assessment (report)	750 words
Small Software-based Project	1,500 words
Small Project Brief	500 words
Learning Log	500 words
Project Report & Presentation	2,000 words
Small Problem-Solving Test	500 words
End of Module Assessment	1,500 words
Level 5	
Constructed Development Environment	1,250 words
Software Artefact	1,250 words
Technical Assessment (reflective report)	750 words
Informal Presentation (10 min + 5 min questions)	750 words
Work-integrated Proposal Brief	500 words
Work-integrated Learning Log	750 words
Work-integrated Enterprise Proposal	1,500 words
Presentation (15m + 5-10m questions)	1,250 words

Marked Assignment (test)	750 words
Personal Competency Assessment	500 words
End of Module Assessment	2,000 words
Software Development Assignment (simple web app)	1,000 words
Small Software Development Project (digital solution)	2,250 words
Agreed Initial Project Proposal	500 words
Data Management Environment	2,000 words
Technical Report (specialist module)	1,000 words
Design Implementation (specialist module)	1,000 words
Software Implementation (specialist module)	2,000 words
Level 6	
Small Technical Assessment	750 words
Technical Report	1500 words
Design Implementation	1500 words
Software Implementation	3000 words
Co-constructed Work-integrated Definitive Brief (group project)	750 words
Reflective Log/Report (group project)	2500 words
Delivery of Project Outcome (group project)	3000 words
Presentation (linked to group project) (approx. 15min + questions)	1250words

Definitive Brief (Synoptic project)	1000 words
Final Report (Synoptic project)	1500 words
Software Artefact (Synoptic project)	5000 words
Presentation and Viva (Synoptic project)	2500 words
Definitive Brief (specialist project)	500 words
Final Report (specialist project)	750 words
Software Artefact (specialist project)	2500 words
Presentation (specialist project)	1250 words

The following table summarises the assessment tariff for levels 4, 5 and 6. This will normally apply to the Digital and Technology Solutions degree apprenticeship, across all pathway modules. All word limits are subject to a margin of (+/-) 10%.

MODULE	CREDITS	ASSESSMENT	WORD EQUIVALENCE
LEVEL 4 TARIFF	20 Credit	3,000 words	3,000 words
DaTS Core Modules			
Introduction to Academic Skills	20	Initial 'Ideal' Learning Plan Annotated Bibliography Technical Report Digital Portfolio Artefact	500 words 750 words 750 words 1000 words
Introduction to Computing and Digital Systems	20	Technical Assessment (test) Technical Assessment (report) Small Software Project	750 words 750 words 1500 words
Introduction to Business Systems and Processes	20	Work-integrated project brief Work-integrated learning log Report and demonstration	500 words 500 words 2000 words
Introduction to Web Development	20	Technical Assessment (test) Technical Assessment (report) Small Software Project	750 words 750 words 1500 words
Introduction to Object Oriented Programming	20	3 Small Technical Assessments (problem-solving test) End of Module Assessment (test)	500 words (x 3) 1500 words
Introduction to Maths and Algorithms for Computing	20	3 Small Technical Assessments (2 x problem-solving test 1 x written assessment test) End of Module Assessment (test)	500 words (x 3) 1500 words

MODULE	CREDITS	ASSESSMENT	WORD EQUIVALENCE
LEVEL 5 TARIFF	20 Credit	4,000 words	4,000 words
DaTS Core Modules			
Software Development Lifecycle	20	Constructed Development Environment Software Artefact Technical Assessment (reflective report) Informal Presentation (10 min + 5 min questions)	1250 words 1250 words 750 words 750 words
Industry in Context	20	Work-integrated Proposal Brief Work-integrated Learning Log Work-integrated Enterprise Proposal Presentation (15m + 5-10m questions)	500 words 750 words 1500 words 1250 words
Applied Object Oriented Programming	20	2 x Marked Assignments (tests) Personal Competency Assessment End of Module Assessment	750 words (each) 500 words 2000 words
Applied Web Systems and Technologies	20	Software Development Assignment (simple web app) Technical Assessment (reflective report) Small Software Development Project (digital solution)	1000 words 750 words 2250 words

Data Management in Business Environments	20	Agreed Initial Project Proposal Data Management Environment Technical Assessment (reflective report) Informal Presentation (10 min + 5 min questions)	500 words 2000 words 750 words 750 words
DaTS Specialist Module			
Cloud & Mobile Development – Software Engineer Specialism 1	20	Technical Report Design Implementation Software Implementation	1000 words 1000 words 2000 words

MODULE	CREDITS	ASSESSMENT	WORD EQUIV
LEVEL 6 TARIFF	20 Credit	5,000 Words	5,000 Words
	30 Credit	7,500 Words	7,500 Words
	40 Credit	10,000 Words	10,000 Words
Core Modules			
Business Architectures, Services & Communications	30	Small Technical Assessment (test) (x 3) Technical Report Design Implementation Software Implementation	750 words (x 3) 1500 words 1500 words 3000 words
Developing a Digital Business	30	Co-constructed Work-integrated Definitive Brief Reflective Log/Report Delivery of Project Outcome	750 words 2500 words 3000 words 1250 words

		Group Presentation (approx. 15min + questions)	
Synoptic Project	40	Definitive Brief Final Report Software Artefact Presentation and <i>viva voce</i>	1000 words 1500 words 5000 words 2500 words
Specialist Module			
Engineering Digital Business Solutions – Software Engineer Specialism 2	20	Definitive Brief Final Report Software Artefact Presentation	500 words 750 words 2500 words 1250 words

Map of assessment types – Annexe 2

Level	Study module/unit	Initial ‘ Ideal’ Learning Plan	Annotated Bibliography	Technical Report	Digital Portfolio Artefact	Technical Assessment (test)	Technical Assessment (report)	Small Software Project	Work-integrated project brief	Work-integrated learning log	Report and demonstration	Technical Assessment (problem solving)	Technical Assessment (written)	End of module assessment
4	Introduction to Academic and Professional Skills	*	*	*	*									
	Introduction to Computing and Digital Systems					*	*	*						
	Introduction to Business Systems and Processes								*	*	*			
	Introduction to Web Development					*	*	*						
	Introduction to Object Oriented Programming											X3		*
	Introduction to Maths and Algorithms for Computing											X2	*	*

Level	Study module/unit	Constructed Development Environment	Software Artefact	Technical Assessment (reflective report)	Presentation	Work-integrated Proposal Brief	Work-integrated Learning Log	Work-integrated Enterprise Proposal	Marked Assignments (tests)	Personal Competency Assessment	Personal Competency Assessment	End of Module Assessment	Software Development Assignment (simple web app)	Small Software Development Project (digital solution)	Initial Project Proposal	Data Management Environment	Technical Report	Design Implementation	Software Implementation
5	Software Development Lifecycle	*	*	*	*														
	Industry in Context				*	*	*	*											
	Applied Object Oriented Programming								X2	*	*								
	Applied Web Systems and Technologies			*								*	*						
	Data Management for Business Environments			*	*									*	*				
Cloud & Mobile Development – Software Engineer Specialism 1																*	*	*	

Level	Study module/unit	Small Technical Assessment (test)	Technical Report	Design Implementation	Software Implementation	Work-integrated Definitive Brief	Reflective Log/ Report	Delivery of Project Outcome	Definitive Brief	Final Report	Software Artefact	Presentation
6	Business Architectures, Services & Communications	X3	*	*	*							
	Developing a Digital Business					*	*	*				*
	Synoptic Project								*	*	*	*
	Experimental Digital Technology Business Solutions - Software Engineer Specialism 2								*	*	*	*

Annexe 3 - Curriculum mapping against the apprenticeship standard (from 'Annexe 1, Section C, DaTS Assessment Plan')

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

Please ammend this mapping to suit Frameworks used within the different Nations if appropriate.

	DaTS Standards Core Skills	Lvl4	Lvl5	Lvl6
Information Systems:				
1	Is able to critically analyse a business domain in order to identify the role of information systems	4.1 Introduction to Academic and Professional Skills 4.2 Introduction to Computing and Digital Systems 4.3 Introduction to Business Systems and Processes 4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
2	Is able to highlight issues and identify opportunities for improvement through evaluating information systems in relation to their intended purpose and effectiveness.	4.1 Introduction to Academic and Professional Skills 4.2 Introduction to Computing and Digital Systems 4.3 Introduction to Business Systems and Processes 4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.2 Industry in Context 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
Systems Development:				
3	Analyses business and technical requirements to select and specify appropriate technology solutions.	4.1 Introduction to Academic and Professional Skills 4.2 Introduction to Computing and Digital Systems 4.3 Introduction to Business Systems and Processes 4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
4	Designs, implements, tests, and debugs software to meet requirements using contemporary methods including agile development.	4.2 Introduction to Computing and Digital Systems 4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
5	Manages the development and assurance of software artefacts applying secure development practices to ensure system resilience.	4.1 Introduction to Academic and Professional Skills 4.2 Introduction to Computing and Digital Systems 4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.2 Industry in Context 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
6	Configures and deploys solutions to end users.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes 4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming	5.1 Software Development Lifecycle 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
Data:				
7	Identifies organisational information requirements and can model	4.2 Introduction to Computing and Digital Systems 4.4 Introduction to Web Development	5.1 Software Development Lifecycle 5.4 Applied Web Systems and Technologies	6.1 Business Architectures, Services & Communications

	DaTS Standards Core Skills	Lvl4	Lvl5	Lvl6
	data solutions using conceptual data modelling techniques.	4.5 Introduction to Object Oriented Programming	5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.2 Developing a Digital Business
8	Is able to implement a database solution using an industry standard database management system (DBMS).	4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming	5.1 Software Development Lifecycle 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business
9	Can perform database administration tasks and is cognisant of the key concepts of data quality and data security.	4.4 Introduction to Web Development	5.1 Software Development Lifecycle 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
10	Is able to manage data effectively and undertake data analysis.	4.4 Introduction to Web Development	5.1 Software Development Lifecycle 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
Cyber Security:				
11	Can undertake a security risk assessment for a simple IT system and propose resolution advice.	4.2 Introduction to Computing and Digital Systems 4.4 Introduction to Web Development 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.2 Industry in Context 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
12	Can identify, analyse and evaluate security threats and hazards to planned and installed information systems or services (e.g. Cloud services).	4.2 Introduction to Computing and Digital Systems 4.4 Introduction to Web Development 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.2 Industry in Context 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
Business Organisation:				
13	Can apply organisational theory, change management, marketing, strategic practice, human resource management and IT service management to technology solutions development.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes	5.2 Industry in Context	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
14	Develops well- reasoned investment proposals and provides business insights.	4.3 Introduction to Business Systems and Processes	5.2 Industry in Context	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
I.T. Project Management				
15	Follows a systematic methodology for initiating, planning, executing, controlling,	4.3 Introduction to Business Systems and Processes 4.5 Introduction to Object Oriented Programming	5.2 Industry in Context 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2

	DaTS Standards Core Skills	Lvl4	Lvl5	Lvl6
	and closing technology solutions projects.			
16	Applies industry standard processes, methods, techniques and tools to execute projects.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes 4.5 Introduction to Object Oriented Programming	5.2 Industry in Context 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
17	Is able to manage a project (typically less than six months, no inter-dependency with other projects and no strategic impact) including identifying and resolving deviations and the management of problems and escalation processes.	4.3 Introduction to Business Systems and Processes	5.2 Industry in Context 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
Computer and Network Infrastructure:				
18	Can plan, design and manage computer networks with an overall focus on the services and capabilities that network infrastructure solutions enable in an organisational context.	4.4 Introduction to Web Development	5.1 Software Development Lifecycle 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
19	Identifies network security risks and their resolution.	4.2 Introduction to Computing and Digital Systems 4.4 Introduction to Web Development 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2

	DaTS Standards Core Skills	Lvl4	Lvl5	Lvl6
Core Technical Knowledge				
20	How business exploits technology solutions for competitive advantage.	4.2 Introduction to Computing and Digital Systems 4.3 Introduction to Business Systems and Processes	5.1 Software Development Lifecycle 5.2 Industry in Context 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business
21	The value of technology investments and how to formulate a business case for a new technology solution, including estimation of both costs and benefits.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes	5.2 Industry in Context 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
22	Contemporary techniques for design, developing, testing, correcting, deploying and documenting software systems from specifications, using agreed standards and tools.	4.1 Introduction to Academic and Professional Skills 4.2 Introduction to Computing and Digital Systems 4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2

	DaTS Standards Core Skills	Lvl4	Lvl5	Lvl6
23	How teams work effectively to produce technology solutions.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes	5.1 Software Development Lifecycle 5.2 Industry in Context 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
24	The role of data management systems in managing organisational data and information.	4.3 Introduction to Business Systems and Processes 4.4 Introduction to Web Development	5.1 Software Development Lifecycle 5.2 Industry in Context 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments	6.1 Business Architectures, Services & Communications
25	Common vulnerabilities in computer networks including unsecure coding and unprotected networks.	4.2 Introduction to Computing and Digital Systems 4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments	6.1 Business Architectures, Services & Communications
26	The various roles, functions and activities related to technology solutions within an organisation.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes 4.5 Introduction to Object Oriented Programming	5.1 Software Development Lifecycle 5.2 Industry in Context 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business
27	How strategic decisions are made concerning acquiring technology solutions resources and capabilities including the ability to evaluate the different sourcing options.	4.3 Introduction to Business Systems and Processes 4.4 Introduction to Web Development	5.1 Software Development Lifecycle 5.2 Industry in Context 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
28	How to deliver a technology solutions project accurately consistent with business needs.	4.1 Introduction to Academic and Professional Skills 4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming	5.1 Software Development Lifecycle 5.2 Industry in Context 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
29	The issues of quality, cost and time for projects, including contractual obligations and resource constraints.	4.3 Introduction to Business Systems and Processes 4.5 Introduction to Object Oriented Programming	5.1 Software Development Lifecycle 5.2 Industry in Context 5.4 Applied Web Systems and Technologies 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2

	DaTS Standards Core Skills	Lvl4	Lvl5	Lvl6
Core Behavioural Skills: Professional, Interpersonal & Business Skills				
30	Fluent in written communications and able to articulate complex issues.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.2 Industry in Context 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business
31	Make concise, engaging and well-structured verbal presentations, arguments and explanations.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes	5.1 Software Development Lifecycle 5.2 Industry in Context 5.5 Data Management for Business Environments	6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
32	Able to deal with different, competing interests within and	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes	5.2 Industry in Context 5.5 Data Management for Business Environments	6.2 Developing a Digital Business

	outside the organisation with excellent negotiation skills.			6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
33	Is able to identify the preferences, motivations, strengths and limitations of other people and apply these insights to work more effectively with and to motivate others.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes	5.2 Industry in Context 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
34	Competent in active listening and in leading, influencing and persuading others.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes	5.2 Industry in Context 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
35	Able to give and receive feedback constructively and incorporate it into his/her own development and life-long learning.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes	5.1 Software Development Lifecycle 5.2 Industry in Context 5.3 Applied Object Oriented Programming 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
36	Apply analytical and critical thinking skills to Technology Solutions development and to systematically analyse and apply structured problem solving techniques to complex systems and situations.	4.2 Introduction to Computing and Digital Systems 4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.2 Industry in Context 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business
37	Able to put forward, demonstrate value and gain commitment to a moderately complex technology-oriented solution, demonstrating understanding of business need, using open questions and summarising skills and basic negotiating skills.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes	5.2 Industry in Context 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
38	Able to conduct effective research, using literature and other media, into IT and business related topics.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes	5.1 Software Development Lifecycle 5.2 Industry in Context 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business
Core Behavioural Skills: Attributes and Behaviours				
39	Have demonstrated that they have mastered basic business disciplines, ethics and courtesies, demonstrating timeliness and focus when faced with distractions and the ability to complete tasks to a deadline with high quality.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes	5.2 Industry in Context 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
40	Flexible attitude.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes	5.1 Software Development Lifecycle 5.2 Industry in Context 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2

41	Ability to perform under pressure.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes 4.5 Introduction to Object Oriented Programming 4.6 Introduction to Maths and Algorithms for Computing	5.2 Industry in Context 5.3 Applied Object Oriented Programming 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
42	A thorough approach to work.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes 4.5 Introduction to Object Oriented Programming 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.2 Industry in Context 5.3 Applied Object Oriented Programming 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business
43	Logical thinking and creative approach to problem solving.	4.5 Introduction to Object Oriented Programming 4.6 Introduction to Maths and Algorithms for Computing	5.2 Industry in Context 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business

	Software Engineering Specialism	Lvl4	Lvl5	Lvl6
	Skills			
44	Create effective and secure software solutions using contemporary software development languages to deliver the full range of functional and non-functional requirements using relevant development methodologies.	4.2 Introduction to Computing and Digital Systems 4.4 Introduction to Web Development	5.1 Software Development Lifecycle 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
45	Undertake analysis and design to create artefacts, such as use cases to produce robust software designs.	4.2 Introduction to Computing and Digital Systems 4.5 Introduction to Object Oriented Programming 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.3 Applied Object Oriented Programming 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
46	Produce high quality code with sound syntax in at least one language following best practices and standards.	4.2 Introduction to Computing and Digital Systems 4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming	5.1 Software Development Lifecycle 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
47	Perform code reviews, debugging and refactoring to improve code quality and efficiency.	4.5 Introduction to Object Oriented Programming 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
48	Test code to ensure that the functional and non-functional requirements have been met.	4.2 Introduction to Computing and Digital Systems 4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming	5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
49	Deliver software solutions using industry standard build	4.1 Introduction to Academic and Professional Skills 4.2 Introduction to Computing and Digital Systems	5.1 Software Development Lifecycle 5.4 Applied Web Systems and Technologies	6.1 Business Architectures, Services & Communications

	Software Engineering Specialism	Lvl4	Lvl5	Lvl6
	processes, and tools for configuration management, version control and software build, release and deployment into enterprise environments.	4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming	5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
Technical Knowledge				
50	How to operate at all stages of the software development lifecycle.	4.2 Introduction to Computing and Digital Systems 4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.3 Applied Object Oriented Programming 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
51	How teams work effectively to develop software solutions embracing agile and other development approaches.	4.1 Introduction to Academic and Professional Skills 4.3 Introduction to Business Systems and Processes 4.5 Introduction to Object Oriented Programming	5.1 Software Development Lifecycle 5.2 Industry in Context 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.2 Developing a Digital Business 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
52	How to apply software analysis and design approaches.	4.2 Introduction to Computing and Digital Systems 4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming	5.1 Software Development Lifecycle 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
53	How to interpret and implement a design, compliant with functional, non-functional and security requirements.	4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming 4.6 Introduction to Maths and Algorithms for Computing	5.1 Software Development Lifecycle 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
54	How to perform functional and unit testing.	4.2 Introduction to Computing and Digital Systems 4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming	5.1 Software Development Lifecycle 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2
55	How to use and apply the range of software tools used in Software engineering.	4.1 Introduction to Academic and Professional Skills 4.2 Introduction to Computing and Digital Systems 4.4 Introduction to Web Development 4.5 Introduction to Object Oriented Programming	5.1 Software Development Lifecycle 5.3 Applied Object Oriented Programming 5.4 Applied Web Systems and Technologies 5.5 Data Management for Business Environments 5.6 Cloud & Mobile Development – Software Engineer Specialism 1	6.1 Business Architectures, Services & Communications 6.3 Engineering Digital Business Solutions – Software Engineer Specialism 2

Annexe 4: 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 apprentice 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 apprentices 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 than English** must have programme specifications both in English and the language of delivery.