

Title of Programme:

BSc (Hons) Digital and Technology Solutions Professional (Degree Apprenticeship)

Programme Code: CMDADTS

Programme Specification

This programme specification is relevant to apprentices entering:
01 September 2023

Associate Dean of School (Academic Quality Assurance):
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A programme specification is a collection of key information about a programme of study (or course). It identifies the aims and learning outcomes of the programme, lists the modules that make up each stage (or year) of the programme, and the teaching, learning and assessment methods used by teaching staff. It also describes the structure of the programme, its progression requirements and any programme-specific regulations. This information is therefore useful to potential apprentices to help them choose the right programme of study, to current apprentices on the programme, and to staff teaching and administering the programme.

Summary of amendments to the programme:

Section	Amendment

If you have any queries regarding the changes, please email AQO@herts.ac.uk

Programme Specification

Digital and Technology Solutions Professional (Degree Apprenticeship)

This programme specification (PS) is designed for prospective apprentices, enrolled apprentices, academic staff and potential employers. It provides a concise summary of the main features of the programme and the intended learning outcomes that a typical apprentice might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the teaching, learning and assessment methods, learning outcomes and content for each module can be found in Definitive Module Documents (DMDs).

Section 1

Awarding Institution/Body	University of Hertfordshire
Teaching Institution	University of Hertfordshire
University/partner campuses	College Lane campus
Programme accredited by	TechSkills (and aligned with BCS RITTech)
Final Qualification	BSc Honours
All Final Award titles	BSc Honours Digital & Technology Solutions (Software Engineer)
(Qualification and Subject)	BSc Honours Digital & Technology Solutions (Cyber Security Analyst)
FHEQ level of award	6

A. Programme Rationale

The structure of the Digital & Technology Solutions (DTS) programme is designed to implement the Digital & Technology Solutions Professional (DTSP) degree apprenticeship occupational standard, as published by the Institute for Apprenticeships & Technical Education for the "Digital Industries" (or Information Technology) sector in March 2023.

This programme aims to lead DTSP apprentices to a BSc (Honours) in Digital & Technology Solutions.

As reported in the occupational standard, "DTSPs [...] evaluate, initiate, create and support business solutions using digital technology. DTSPs use data to evaluate the commercial and security risks and benefits of potential digital and technology solutions before making recommendations for strategies that may have far reaching consequences. [...] They have a passion for digital technology; keeping in touch with emerging trends and developments. DTSPs have a broad set of skills and knowledge across the main areas of the digital and technology landscape. This enables them to understand the complexity of information systems, systems development, data, cyber security, business organisation, IT project management and computer and network infrastructures [...] with a rigorous approach to commerciality and budget to deliver quality solutions."

Alongside their core apprenticeship and learning journey, DTSP apprentices have the opportunity to specialise in different areas. The University of Hertfordshire's DTS programme enables its DTSP apprentices to specialise in one of the following two roles:

1. Software Engineer
2. Cyber Security Analyst

B. Educational Aims of the Programme

A degree apprenticeship programme integrates the provision of undergraduate degree level academic knowledge, understanding and skills with the opportunity to contextualise this provision in the workplace and thus to develop occupation competency at a professional level in specific job roles.

The DTS programme has been designed to be fully endorsed (accredited) by TechSkills: this means that it meets the degree apprenticeship occupational standard set by an employer panel under the aegis of TechSkills and the accreditation criteria for Tech Industry Gold apprenticeships, which are hereby summarised:

1. Learning Outcomes: Accreditation recognises programmes which meet priority industry needs for tech & digital careers, integrating business, technology, project and professional skills.
 - 1.1 The programme delivers Learning Outcomes as set out in the relevant Apprenticeship Standard.
2. Delivery: Accreditation ensures focus on employers, including the holistic integration of skills based on their real-world application.
 - 2.1 Business, technology, project and professional skills are holistically integrated in delivery.
 - 2.2 Skills are developed in the context of their real-world application, and a substantial amount of coursework is carried out on the job.
 - 2.3 Substantial teamwork and project work are incorporated.
 - 2.4 Programme delivery responds to the needs of employers and employees.
 - 2.5 Programme delivery is designed to accelerate productivity in the workplace, for example in the order in which skills development takes place.
 - 2.6 The capacity and capability is in place to deliver the programme to a high quality standard, and learning is targeted at the appropriate level.
3. Assessment: Accreditation confirms the appropriateness and consistency of assessment.
 - 3.1 The assessment strategy is appropriate to the Learning Outcomes.
 - 3.2 Mechanisms are in place to ensure fairness and consistency of assessment.
4. Inclusivity: Accreditation requires commitment to diversity, equity and inclusion.
 - 4.1 Recruitment policies encourage applicants with relevant aptitude from all backgrounds, with particular focus on gender and social mobility.
 - 4.2 Policies are in place to treat all apprentices equally, whilst also seeking to raise aspirations and support achievement for people with diverse requirements and backgrounds.
 - 4.3 Learning materials avoid biases, for example in the use of language, that could create barriers to learning for different groups of apprentices

The DTS programme adheres to and supports the associated EPA Plan and is aligned with the QAA Subject Benchmark Statement for Computing (2022). Apprentices, who are engaged in a minimum of 30 hours of professional employment per week, benefit from structured learning in the workplace, supported by both the university and their employer. Furthermore, the programme has been developed with assistance from a range of local employers to ensure it addresses the needs of the region. Following feedback from both employers and learners, the duration of the programme has been reduced from four years to three.

The teaching in this programme is informed by the research strengths of the Department of Computer Science, as well as its longstanding relationships with business and industry through activities such as Knowledge Transfer Partnerships (KTPs) and consultancy. The programme also builds upon its campus-based BSc (Hons) Computer Science and Information Technology programme, which is a well-established and highly popular degree course."

In addition to academic development, the programme recognises the importance of developing apprentices' professional and civic character, as articulated through the University's Graduate Attributes. The programme has been devised in accordance with the University's graduate attributes of programmes of study as set out in [UPR TL03](#).

Diversity and Inclusion

Our programmes are purposefully designed to enable all apprentices to engage meaningfully with the curriculum, ensuring it is accessible and representative. We are committed to supporting apprentices in shaping their learning experiences by removing barriers and enabling them to succeed. Our curriculum explicitly incorporates multiple and representative perspectives, valuing both collective identities and individual

diversity. The learning, teaching, and assessment activities are designed to enable apprentices to understand how they can improve outcomes for both themselves and others. All apprentices are valued members of our learning community, and we are keen to hear their voices, encourage active listening, and facilitate their self-expression throughout their studies.

In line with this, the DTS programme, like any degree apprenticeship, ensures that apprentices' voices are heard. This is further facilitated by regular Progress Review Meetings conducted by our Employer Liaison Tutors with both apprentices and employers. These meetings occur four times a year, every academic year.

The programme has been devised in accordance with the University's graduate attributes of programmes of study as set out in [UPR TL03](#).

Additionally, this programme aims to:

- develop a range of cognitive abilities and practical skills relevant to the successful design, development, implementation, and evaluation of digital technology-enabled solutions to business problems, and relevant to the application of these solutions in a variety of application domains;
- develop a range of cognitive abilities and practical skills relevant to the management of the development of digital solutions as above;
- appreciate the legal, social, ethical, environmental, and professional issues involved in the development and application of digital technologies;
- acquire high level skills in analysis, critical thinking, entrepreneurial and problem-solving to enable long term career development and progression at a professional level;
- develop occupational competency in one of the two roles: as a Software Engineer, a Cyber Security Analyst, or in a closely related role;
- gain direct real-world experience of operating in one of these roles within a business environment;
- develop a range of transferable skills including communication, cogent presentation of ideas and arguments, with independent and team working; and to practise these skills within a team-based, project-centred curriculum and in the workplace.

Graduate Attributes

Our graduates will be capable and professional, creative and enterprising, and will build their social and global awareness throughout. In addition to their subject expertise and proficiency, apprentices studying in this programme, as graduates from the University of Hertfordshire, will be:

- Professionally focused
- Globally minded
- Sustainability driven
- Digitally capable and confident
- Inclusive and collaborative
- Evidence based and ethical

British Values, Safeguarding and Prevent

The programme and the University of Hertfordshire as a whole place a great emphasis on British Values, as both want to ensure that apprentices studying with us become valuable and responsible members of society who treat others with respect and tolerance, regardless of background.

The basic British Values include:

- democracy
- the rule of law
- individual liberty
- mutual respect and tolerance for those of different faiths and beliefs.

Each module within the DTS programme is expected to address the above values and to ensure they are at the core of any teaching & learning activity and are recognised as central to the development of each and all KSBs, as expected by the standard of reference.

As per any other programme offered by the University of Hertfordshire, safeguarding is pursued consistently and regulated by a number of UPRs (e.g., EQ10, HS10, all available from [UPR TL03](#)).

Staff working within and/or for the DTS programme will engage with apprentices and employers to ensure the above activities and principles are consistently pursued also with on-the-job learning.

C. Intended Learning Outcomes

The programme provides opportunities for apprentices to develop and demonstrate knowledge and understanding, skills and other attributes in the following areas. The programme outcomes are referenced to the occupational standard for the Digital & Technology Solutions Professional (see their “Duties”), the QAA benchmark statements for Computing the Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies (2014) and relate to the typical apprentice. Additionally, the SEEC Credit Level Descriptors for Further and Higher Education (2021) have been used as a guiding framework for curriculum design.

Given the complexity of all KSBs identified in the occupational standard of reference (and organised in “Duties”), the programme aims for apprentices to pursue the following learning outcomes.

Knowledge and Understanding	Teaching and learning methods	Assessment strategy
A1. Demonstrate knowledge and understanding of the underlying principles of scientific & computational thinking that underpin the development and exploitation of Information Technology, including the application of the scientific method to problem solving, the use of modelling techniques, and the complexity of interactions between agents, both humans and programmed systems. [Duties: 2, 6, 10, 13]	Acquisition of knowledge and understanding is developed partly through academic study and partly through the workplace. Typically, knowledge, understanding and intellectual skills are taught at the University with apprentices putting them into context and appreciating their relevance through applying them at work. The University will work closely with the employer in this regard.	Knowledge and understanding will be assessed by the University as follows. At level 4, A1 – A4 are assessed primarily through a combination of coursework and, whenever appropriate, in-class tests, presentations, demonstrations. Apprentices will be gently introduced to some teamwork and project-based assessment. Assessments at level 4 concentrate on specific topics within a provided framework, rather than on substantive integrative tasks.
A2. Demonstrate knowledge and understanding of the essential facts, theories and principles relevant to the engineering of technology solutions including	Throughout, apprentices are encouraged to undertake independent study both to supplement and consolidate what is being taught/learned and to broaden their individual	At level 5, A1 – A5 (but not A4) will be assessed through

information systems, systems development, data management, cyber security, IT project management, and computer/ network infrastructure. [Duties: 3, 7, 11, 12]

A3. Demonstrate knowledge and understanding of the context within which technology solutions are deployed including business organisation, meeting business requirements and recognising practical constraints. [Duties: 1, 5, 8, 14]

A4. Demonstrate knowledge and understanding of recognised methodologies and tools for the specification, design, development, test, implementation, support and critical evaluation of computer-based systems. [Duties: 2, 4, 9]

A5. Demonstrate knowledge and understanding of the wider considerations involved for professional practice, including the legal, social, ethical, professional and environmental issues. [Duties: 14, 15, 9]

Additionally for the Software Engineering specialist award

A6. Demonstrate knowledge and understanding of the engineering principles and practices behind all stages of the software development process including requirements, analysis, design, development, overall management of software development processes and approaches, and the provision of security robustness. [Duties: 16, 17, 18, 19, 20, 21, 22, 23]

Additionally for the Cyber Security Analyst specialist award

A7. Demonstrate in-depth and broad understanding of

knowledge and understanding of the subject.

In particular, Work Based Learning (WBL) is deployed within all the modules, typically as work-based projects or other directed assignments.

Acquisition of knowledge and understanding is through a combination of lectures, small group tutorials, supervised computer laboratory sessions, online material, and guided self-study, as well as WBL. In addition, assessed coursework plays an important part in the learning process.

Throughout the course there is a partnership between the employer and the university, established via contractual agreement. The employer will provide learning support for the individual apprentice e.g. through a “mentor” and may, in some cases, contribute material such as case studies and guest lectures for the cohort.

Throughout the course, material is integrated by means of the DTS-specific modules (see Section D, on *Programme Structure*), relating different topics through the core themes.

At level 4, A1–A4 are introduced via specific topics, mostly through classroom teaching, and by pursuing Duties, which apprentices can reasonably approach and complete. Tasks will in general focus on building proficiency and confidence at the topic level, and apprentices will not be expected to work at the systems level without considerable support.

Specifically, at level 4:

A1 is addressed by pursuing Duties 2 and 6;

A2 is addressed by pursuing Duties 3 and 11;

a broader combination of coursework, in-class tests, presentations and demonstration and with more substantial project-based components.

Assessments also will begin to include more substantial elements of teamwork, combined with elements of project work and thus exposing apprentices to more complete and integrative assessment tasks.

Assessments will also include more regularly and focused work-based projects or other assignments, drawing on the apprentice’s knowledge of and experience in the workplace.

Apprentices meeting the progression requirements from levels 4 and 5 (see Section 1D, Table 6) will be deemed to have met the minimum threshold level in A1 – A7 necessary to progress to examination for an Honours award.

At level 6, A1 – A7 will again be assessed through a combination of coursework, in-class test (whenever appropriate), but more crucially by means of a significant component of individual project-type activity, including work-based projects, for which apprentices will be expected: to establish for themselves the framework within which the work is carried out; to select and to apply knowledge and understanding as appropriate to the specific problem(s) being addressed; and to evaluate solutions, referencing appropriate research or scholarship.

At all levels, where appropriate, assessments will also include a component of peer assessment by apprentices.

The individual “synoptic” project, as expected for the final EPA, also plays a major role in assessing knowledge and understanding of apprentices against the

network infrastructure, software and data to identify where threat and hazard can occur, including the main types of security and the main attack techniques. [Duties: 41, 42, 43, 44, 45, 46]

A3 is addressed by pursuing Duties 1 and 8;

A4 is addressed by pursuing Duties 2 and 9;

A5 would only be addressed from level 5 onwards.

At level 5, additional topics addressing A1–A5 will be introduced using the same teaching methods as at Level 4; in addition, WBL will be progressively more and more encouraged. Apprentices will be expected to begin to integrate material and adopt a more critical and analytical attitude, as well as to be more independent and proactive in addressing all expected LOs.

Specifically, at level 5:

A1 is addressed by pursuing Duty 13;

A2 is addressed by pursuing Duties 7 and 12;

A3 is addressed by pursuing Duty 5;

A5 is addressed by pursuing Duty 15.

No particular Duty at level 5 will address A4.

Depending on the specialism followed by the apprentice, one or more of A6 to A7 will start to be addressed in depth during level 5, although all specialist areas are also introduced as part of the core.

At level 6, apprentices are expected to be increasingly independent, critical and evaluative. Additionally, apprentices are expected to take increasing responsibility for the selection and use of theories, principles and methods in particular contexts, and for tackling particular problems.

Specifically, at Level 6:

A1 is addressed by pursuing Duty 10;

occupational standard of reference.

Throughout the programme, apprentice's employer ("mentor") has an important role to play in supporting apprentices' assessment, in particular by suggesting topics and providing feedback on formative assessment. However, except for the synoptic project, he or she has no formal role in grading.

	<p>A3 is addressed by pursuing Duty 14;</p> <p>A4 is addressed by pursuing Duty 4;</p> <p>Similar to A3, also A5 is addressed by pursuing Duty 14.</p> <p>No particular Duty at level 5 will address A2.</p> <p>Some material at Level 6 will be presented via the same teaching methods as in Levels 4 and 5, but with significant learning undertaken and achieved through WBL and independent, self-study.</p> <p>The specialist project at level 6 plays a key role in enabling the apprentice to integrate all the taught material and apply it in a realistic context.</p> <p>Acquisition of knowledge and understanding will specifically happen through a combination of lectures (A1-A5), tutorials (A1 – A3), courseworks (A1-A5) and laboratory work (A1, A3, A5), at all levels of study. Additional support will be provided by Academic Skills.</p> <p>Throughout, the apprentice is encouraged to progressively undertake more and more independent study both to supplement and consolidate what is being taught/learnt and to broaden their individual knowledge and understanding of the subject.</p>	
Intellectual skills	Teaching and learning methods	Assessment strategy
B1. Understand and apply essential concepts, principles and practices of the subject in the context of well-defined scenarios, showing judgement in the selection and application of tools and techniques (SBS, 4.6; Duties 1, 2, 4, 6, 14)	Same as above	Same as above
Practical skills	Teaching and learning methods	Assessment strategy
C1. Be able to specify, design and develop computer- based systems deploying	Practical skills are developed through academic study and	Practical skills are assessed by the University as follows.

professional techniques, notations, methods and tools (including software tools) as an individual or as part of a team. [Duties 11, 3, 12, 4]

- C2.** Be able to evaluate computer-based systems in respect of quality attributes and trade-offs. [Duties 1, 4, 6, 7, 13]
- C3.** Be able to plan and manage projects to develop and to deploy computer-based systems, recognising any risks, security and safety aspects. [Duties 2, 4, 5, 9, 13]
- C4.** Be able to devise effective solutions for complex problems, including those with incomplete information, applying a range of techniques both technical and non-technical, including dialogue with all stakeholders. [Duties 6, 8, 9, 10, 14, 15].

Additionally for the Software Engineering specialist award

- C5.** Design, build and test high quality, secure software solutions, with the ability to deploy the high level of responsibility required for applying engineering principles to all stages of the software development process. [Duties 16, 17, 18, 19, 20, 21, 22, 23]

Additionally for the Cyber Security Analyst specialist award

- C6.** Implement, maintain and support the security controls that protect an organisation's systems and data assets from threats and hazards, with the ability to ensure that security technologies and practices operate in accordance with an organisation's policies and standards, to perform vulnerability assessments,

through the workplace, Typically the principles of practical skills are taught at the University with apprentices practising the application of these principles at work to develop proficiency. The University will work closely with the employer in this regard.

In computing there is significant overlap between practical skills and knowledge, as defined in by the occupational standard of reference, and so much of the commentary in section A above also applies to section C.

Practical skills are developed through the following.

Level 4, 5 and 6 will address C1–C2 using lectures and tutorials for the presentation of instructional material, with supervised computing laboratory sessions, independent study and project work offering the opportunity to practise the skills in a supportive environment. In some cases, particular at levels 5 and 6, practical work is expected to be undertaken in the workplace.

The amount of purely instructional material will decrease as the programme progresses, with apprentices being expected to take an increasing responsibility for developing their own skills and identifying resources to support their development.

C1 to C4 will be addressed at different levels as follows:

At level 4, C1 is addressed by pursuing Duties 11 and 3; C2 by Duties 1 and 6; C3 by Duties 2 and 9; C4 by Duties 6, 8 and 9.

At level 5, C1 is addressed by pursuing Duty 12; C2 by Duties 7 and 13; C3 by Duties 5 and 13; C4 by Duty 15.

At level 6, C1 is addressed by pursuing Duty 4; C2 by Duty 4; C3 by Duty 4; C4 by Duties 10 and 14.

At level 4, C1 will be assessed directly through coursework, and assessed indirectly through in-class tests and/or presentation or demonstrations, whenever appropriate. These will assess understanding that has developed, or been consolidated, as a result of practical activity.

At level 5, C1 and C3 are assessed through team-based development task and project-based assessment.

At level 6, C1 – C4 will be assessed directly and indirectly in the taught modules.

C1 to C4 will also be assessed by the individual “synoptic” project. The project plays a major role in assessing C5 to C6, in particular to assess occupational competency.

As required by the Degree Apprenticeship Assessment Plan, the specialist “synoptic” project acts as an end-point assessment within the degree. Hence it also assesses A1 – A7. EPA has two elements: the project assessment (including report, presentation and Q&As) and the professional discussion (underpinned by a portfolio).

The first element of the EPA are assessed in partnership by the employer, the University and the Independent Assessor, because of their dual value (academic and apprenticeship). The second element will be exclusively assessed by the Independent Assessor, because of its apprenticeship value.

Apprentices meeting the progression requirements from levels 4 and 5 will be deemed to have met the minimum threshold level in C1 – C6 necessary to progress to examination for an Honours award.

It is a requirement for the Degree Apprenticeship that apprentices must maintain a digital portfolio of their completed assessed

and to respond to incidents.
[Duties 41, 42, 43, 44, 45, 46]

The examples used at level 4 will be simple, and considerable support will be given in problem identification and evaluation. At levels 5 & 6 this support will be increasingly reduced, and more open tasks will be set.

Apprentices will be exposed to a variety of technologies such as operating environments, programming languages, applications and specification techniques.

At level 6, apprentices will be expected to extend their skills developed in C1–C4 to the task of evaluating and selecting appropriate approaches to addressing specific tasks appropriate to that level.

Each apprentice will address one of C5 to C6 depending on the specialism chosen. In most cases, specialist practical skills are initially developed in core modules at levels 4 and 5, and then further developed in specialist modules at levels 5 and 6.

As required by the Degree Apprenticeship Assessment Plan, each apprentice carries out a 30 credit individual specialist “synoptic” business-related, work-based project at level 6. It is a substantial piece of work, requiring one full semester to complete and is designed to integrate and demonstrate all the skills, knowledge and behaviours defined in the apprenticeship standard.

practical work to provide evidence of their achievements and capabilities. This includes the synoptic project and presentation. The portfolio will not be assessed separately.

For the role of the employer in assessment, see *Programme-specific assessment regulations*.

Transferable skills	Teaching and learning methods	Assessment strategy
<p>D1. Be capable of analytical and critical thinking, of reflection on own and others work, and be able to explain, justify and otherwise defend an argument, interacting as appropriate, with reference to academic and professional issues and conventions. [Duties 1, 4, 12, 14]</p> <p>D2. Self-manage learning and work including time management, self-</p>	<p>Transferable skills are developed partly through academic study and partly through experience in the workplace. Typically, the principles of transferable skills are taught indirectly during academic study at the University with apprentices developing proficiency through experience at work. The University will work closely with the employer in this regard.</p>	<p>Transferable skills are usually assessed through a variety of means built into the curriculum at all (or most) levels.</p> <p>More explicitly, D1 is assessed as follows:</p> <p>at level 4, by assessing Duty 1; at levels 5 and 6 by reviewing the outcomes of assignments and additionally through peer assessment, where</p>

awareness, independence and initiative, and including the identification of personal needs for continuing professional development. [Duties 9, 14, 15]

D3. Communicate effectively orally, in writing and visually using the conventions, vocabulary and form of both academic expression and professional practice, including mathematical, informal and diagrammatic modes of discourse. [Duties 8, 10]

D4. Work effectively and confidently as a member of a team, understanding the role of leadership including setting direction, negotiation, and taking responsibility. [Duties 2, 5, 8, 10, 15]

D5. Be able to take responsibility as a professional, being aware of the broader impact of activities in the workplace on the organisation, society and the environment. [Duties 5, 14, 15]

Throughout, the apprentice is encouraged to develop transferable skills by maintaining a record of evidence and completing a personal development plan.

Transferable skills are developed through using a variety of teaching and learning methods and strategies.

D1 is introduced at level 4 (e.g. by understanding and critically analysing complexity of business domains), and extended at levels 5 and 6. Apprentices are expected to take an increasing responsibility for their own learning as the programme progresses. They are supported in meeting D3 by personal tutoring from level 4 onwards and regularly for all their studies and apprenticeship, and by guided independent study using both local and central resources: e.g. sessions and self-study guides on information retrieval.

The development of confidence and the ability to use more formal mathematical models is addressed explicitly since level 4.

Central support, e.g. the Mathematics drop-in centre and courses on written and spoken English, are available for any apprentices having difficulties in meeting aspects of D3.

At level 5, team-working will be used more explicitly and systematically in the context of assessed tasks in all modules, thus supporting apprentices in meeting D4.

At level 6, all modules and then the individual synoptic project would address D1–D3 and D5.

Throughout the programme, assessed and non-assessed work encourage the apprentice to develop a range of transferable skills. At level 4, this starts with

appropriate, and by assessing Duty 12 (at level 5) and Duties 4 and 14 (at level 6).

D2 is assessed as follows:

at all levels through the setting of different kinds of task, providing feedback on those tasks to apprentices (including through peer assessment, wherever appropriate) and by assessing Duty 9 at level 4, Duty 15 at level 5 and Duty 14 at level 6.

D3 is assessed at all levels in different ways e.g. by short report(s), team presentations and individual presentations. Specialist modules at levels 5 and 6 will typically offer further opportunities for extended writing and presentations. More explicitly, at level 4 D3 will be assessed by Duty 8 and at level 6 by Duty 10

D4 is assessed through team-based exercises at all levels, and more explicitly by assessing Duties 2 and 8 at level 4, and Duties 5 and 15 at level 5, and Duty 10 at level 6.

D5 is assessed mostly at levels 5 and 6 in taught modules that address professional, social and ethical issues, but also organisational theory and change management. More explicitly, this will happen by assessing Duties 5 and 15 at level 5 and Duty 14 at level 6.

For the role of the employer in assessment, see under A.

It is worth noting that all transferrable skills will be further assessed at level 6 through the individual synoptic project.

closely defined, directed assignments. At level 5 apprentices are encouraged by more loosely defined work and at level 6, by self-definition of the project and other assignments.

Throughout, the apprentice is encouraged to include a record of transferable skills development in the digital skills portfolio.

D. Programme Structures, Features, Levels, Modules, and Credits

The programme is offered in full-time (3 years) mode only and leads to the award of a

- BSc Degree with Honours in Digital & Technology Solutions (Software Engineer)
- BSc Degree with Honours in Digital & Technology Solutions (Cyber Security Analyst)

depending on the chosen specialism. Intake is normally in Semester A (September) for both at level 4 and for direct entrants at levels 5 and level 6.

Professional and Statutory Regulatory Bodies

The programme is accredited with TechSkills and it is aligned with the professional recognition by the British Computer Society for Registered IT Technician (RITTech).

Employment Status

The programme is only available to apprentices who are in full time relevant employment at a professional level and who are sponsored by their employer for a Degree Apprenticeship. An award is only made to apprentices who maintain full-time employment throughout the programme, not necessarily with the same employer.

Work-Based Learning

Work Based Learning (WBL) is integrated within the programme and it is pursued, to different extents, across all taught modules. In addition, the final year synoptic project is largely work-based.

Apprentice Exchange programme/Incoming Exchange

Not applicable

Study Abroad

Not applicable

Programme Structure

The programme structure and progression information below (Table 1a and 1b) is provided for the Honours award. Any interim awards are identified in Table 1b. The Programme Learning Outcomes detailed above are developed and assessed through the constituent modules. Table 2 identifies where each learning outcome is

assessed.

In general, the programme structure of the programme is as represented in the following Figure 1. Specifically, at each level apprentices would study as follows:

- Level 4 (120 credits): 4 core modules (4 x 30 credits)
- Level 5 (120 credits): 3 core modules (3 x 30 credits) plus 1 specialist module (1 x 30 credits)
- Level 6 (120 credits): 2 core modules (2 x 30 credits), plus 1 specialist module (1 x 30 credits), plus final project for EPA (1 x 30 credits)

There are no optional modules for each award. Two specialisms are on offer: Software Engineer and Cyber Security Analyst, leading respectively to the BSc (Hons) Digital & Technology Solutions (Software Engineer) and the BSc (Hons) Digital & Technology Solutions (Cyber Security Analyst) awards.

Both specialisms share nine (9) core modules for a total of 270 credits: each specialism would then come with two (2) additional specialist modules (for a total of 60 credits) taught before the EPA Gateway, plus the specialist Final Project module, leading to the EPA.

Each taught module, either core or specialist, addresses one or more Duties from the standard of reference

Mode of study

Part-time, as per Table 1a-1 and Table 1a-2.

Table 1a-1 Outline Programme Structure: BSc Degree with Honours in Digital & Technology Solutions (Software Engineer)

Level 4

Compulsory Modules Module Title	Module Code	Credit Points	%Test	% Examination	% Coursework	% Practical	Semesters
System, Platform and Digital Solutions Management	4COM2016	30	20	0	80	0	A
Problem-Solving and Programming	4COM2015	30	20	0	80	0	B
Data Modelling and Analysis	4COM2013	30	20	0	80	0	B
Fundamentals of Business Analysis and Digital Transformation	4COM2014	30	0	0	100	0	C

Level 5

Compulsory Modules Module Title	Module Code	Credit Points	%Test	% Examination	% Coursework	% Practical	Semesters
Networks, Operating Systems and Protocols	5COM2012	30	20	0	80	0	A
Digital Solutions for the Enterprise	5COM2010	30	0	0	100	0	B
Software Engineering	5COM2014	30	0	0	100	0	B
Full-stack Development and Configuration	5COM2011	30	20	0	80	0	C

Level 6

Compulsory Modules Module Title	Module Code	Credit Points	%Test	% Examination	% Coursework	% Practical	Semesters
Research and Team Project	6COM2027	30	0	0	100	0	A
Information Operations and Security	6COM2026	30	20	0	80	0	B
Development and Management of Large-Scale Software Systems	6COM2023	30	20	0	80	0	B
Final Project for EPA (Software Engineer)	6COM2025	30	0	0	80	20	C

Progression to level 5 requires a minimum of 90 credits and passes in the “Programming” module.

Progression to level 6 requires a minimum of 210 credits and passes in all level 4 modules.

The award of an Honours degree requires 360 credits, including the Final Project for EPA (Software Engineer) 6COM2025.

Table 1a-2 Outline Programme Structure: BSc Degree with Honours in Digital & Technology Solutions (Cyber Security Analyst)

Level 4

	Module Code	Credit Points	%Test	% Examination	% Coursework	% Practical	Semesters
Compulsory Modules							
Module Title							
System, Platform and Digital Solutions Management	4COM2016	30	20	0	80	0	A
Problem-Solving and Programming	4COM2015	30	20	0	80	0	B
Data Modelling and Analysis	4COM2013	30	20	0	80	0	B
Fundamentals of Business Analysis and Digital Transformation	4COM2014	30	0	0	100	0	C

Level 5

	Module Code	Credit Points	%Test	% Examination	% Coursework	% Practical	Semesters
Compulsory Modules							
Module Title							
Networks, Operating Systems and Protocols	5COM2012	30	20	0	80	0	A
Digital Solutions for the Enterprise	5COM2010	30	0	0	100	0	B
Software Engineering	5COM2014	30	0	0	100	0	B
Security Assessment and Incident Response	5COM2013	30	20	0	80	0	C

Level 6

	Module Code	Credit Points	%Test	% Examination	% Coursework	% Practical	Semesters
Compulsory Modules							
Module Title							
Research and Team Project	6COM2027	30	0	0	100	0	A
Information Operations and Security	6COM2026	30	20	0	80	0	B
Cyber Security Compliance and Governance	6COM2022	30	20	0	80	0	B
Final project for EPA (Cyber Security Analyst)	6COM2024	30	0	0	80	20	C

Progression to level 5 requires a minimum of 90 credits and passes in the “Programming” module.

Progression to level 6 requires a minimum of 210 credits and passes in all level 4 modules.

The award of an Honours degree requires 360 credits, including the Final project for EPA (Cyber Security Analyst) 6COM2024.

Honours classification

The University has approved structure and assessment regulations common to all programmes. Full details are provided in [UPR AS14](#), Section D.

Table 1b Final and interim awards available

The programme provides the following final and interim awards:

Final Award	Award Title	Minimum requirements	Available at end of Level	Programme Learning Outcomes developed (see above)
BSc (Hons)	Digital & Technology Solutions (Software Engineer)	360 credit points including 240 at level 6/5 of which 120 must be at level 6. The following module must be passed (without compensation): Final Project for EPA (Software Engineer) 6COM2025.	6	All programme learning outcomes (see Table 2) except A7 and C6
BSc (Hons)	Digital & Technology Solutions (Cyber Security Analyst)	360 credit points including 240 at level 6/5 of which 120 must be at level 6. The following module must be passed (without compensation): Final project for EPA (Cyber Security Analyst) 6COM2024.	6	All programme learning outcomes (see Table 2), except A6 and C5

Interim Award	Award Title	Minimum requirements	Available at end of Level	Programme Learning Outcomes developed (see above)
University Certificate		45 credit points at level 4	4	See UPR AS11, section 13: http://sitem.herts.ac.uk/secreg/upr/AS11.htm
Certificate of Higher Education		120 credit points at level 4	4, 5	See UPR AS11, section 13: http://sitem.herts.ac.uk/secreg/upr/AS11.htm
Diploma of Higher Education		240 credit points including at least 120 at level 5	5, 6	See UPR AS11, section 13: http://sitem.herts.ac.uk/secreg/upr/AS11.htm
BSc	Digital Studies	300 credit points including at least 60 credits at level 6.	6	All programme learning outcomes (see Table 2) except A6, A7, C5 and C6

Programme-specific assessment regulations

The programme abides to the expected learning outcomes and any specific requirement and regulation as stated in the Digital and Technology Solutions Professional apprenticeship standard of reference. In addition, it complies with the University's academic regulations (in particular, [UPR AS11](#), [UPR AS12](#) and [UPR AS14](#), including all relevant appendixes) with the exception of those listed below, which have been approved by the University:

- As specified by the Degree Apprenticeship Assessment Plan,
 - An apprentice can only be admitted and registered to their Final Project module if they successfully pass their EPA Gateway: as stated by the EPA Plan, a crucial condition is that “the apprentice’s employer must be content that the apprentice has attained sufficient KSBs to complete the degree-apprenticeship”;
 - for an award with Honours and hence a Degree Apprenticeship, an apprentice cannot be compensated for their Final Project module for the chosen specialism.
- A maximum of 30 credit points can be compensated across the programme

Further points of clarification and interpretation relevant to this specific programme are given below:

- Attendance is mandatory. Each session for each module will come with some specific requirements as attendance is concerned.
- Given the degree apprenticeship nature of the programme, apprentices should ensure any leave they might be entitled to take as employees does not clash with scheduled off-the-job sessions (including but not limited to lectures, tutorials, assessment sessions, progress review meetings, etc.) to be attended at uni and/or at work.
- Apprentices should refer to the official EPA Plan of the occupational standard of reference to gain full understanding of how academic awards and EPA gradings are jointly awarded within this integrated degree apprenticeship programme.

Completed Work Portfolio

In accordance with the Degree Apprenticeship Assessment Plan, for an award with Honours and hence a Degree Apprenticeship, apprentices must maintain a digital portfolio of their completed work to demonstrate their achievements and capabilities. It consists of the practical output of all assessments completed during the programme, plus any related evidence of fulfilment of respective Duties, as further developed and/or applied at work and against the list of expected outcomes (technical knowledge, skills and behaviours) as specified by the Standard. Since these have already been assessed, no further assessment will take place, but to gain an Honours award the portfolio must be maintained and it will support the second part of the EPA.

End-Point Assessment

In accordance with the Apprenticeship Standard, the final year project (specific for the chosen specialism) provides evidence and is a component of the end-point assessment for the Degree Apprenticeship. Both the project outcomes and the associated presentation will be assessed. The project is work-based, is chosen in conjunction with the employer, and is assessed jointly by the university (as end-point assessment organisation, EPAO), and the employer.

E. Management of Programme & Support for apprentice learning.

Management

The programme is managed and administered through:

- The Programme Leader, who is responsible for advising apprentices on the programme as a whole and chairing the programme committee
- The Employer Liaison Tutor, who is responsible for running regular Progress Review Meetings and meet with both the Apprentice and their Employer (or representatives)
- Apprentice representatives on programme committees
- Module Leaders
- A designated administrative team to deal with day-to-day administration associated with the modules within the programme.
- Dean of School;

- Associate Dean (Academic Quality Assurance);
- Associate Dean (Learning, Teaching and Apprentice Experience);
- An Admissions Tutor, with specific responsibility for selection and Initial Needs Assessment.
- A Programme Committee, the membership of which is defined by the Standing Orders of the Academic Board, and that includes apprentice representation

Support

Apprentices are supported by:

- An induction week at the beginning of each new academic session.
- Personal Tutors to provide academic and pastoral support
- A substantial Apprentice Centre that provides advice on issues such as finance, University regulations, legal matters, accommodation, international apprentice support, etc
- Office of Dean of Apprentices, Apprentice Wellbeing (incorporating Counselling, Mental Health and Disability Support), Chaplaincy, and Day Nursery
- SPECS Academic Support Hub (SUSH) who provide a cohesive one-stop service for providing and/or managing academic skills and academic support for all apprentices within the School
- A versatile on-line inter-active intranet and learning environment
- Guided apprentice-centred learning on Canvas module sites
- Access to extensive digital and print collections of information resources
- Attractive modern study environments in 3 Learning Resources Centres
- Apprentice Success Hubs, which include a Mathematics Drop-in Centre
- Medical Centre
- University Disability Advisors
- Careers and Employment
- Hertfordshire Apprentice's Union
- Dedicated programme site
- Academic Support (<https://www.herts.ac.uk/life/support-and-wellbeing/academic-support>)

F. Other sources of information

In addition to this Programme Specification, the University publishes guidance to registered apprentices on the programme and its constituent modules:

- A dedicated programme site
- A Definitive Module Document (DMD) for each constituent module;

The [Ask Herts](#) website provides information on a wide range of resources and services available at the University of Hertfordshire including academic support, accommodation, fees, funding, visas, wellbeing services and apprentice societies.

As a condition of registration, all apprentices of the University of Hertfordshire are required to comply with the University's rules, regulations and procedures. These are published in a series of documents called 'University Policies and Regulations' (UPRs). The University requires that all apprentices consult these documents which are available on-line, on the UPR web site, at: <http://www.herts.ac.uk/secreg/upr/>. In particular, [UPR SA07](#) 'Regulations and Advice for Apprentices' Particular Attention - Index' provides information on the UPRs that contain the academic regulations of particular relevance for undergraduate and taught postgraduate apprentices.

In accordance with section 4(5) of the Higher Education and Research Act 2017 (HERA), the UK Office for Apprentices (OfS) has registered the University of Hertfordshire in the register of English higher education providers. The Register can be viewed at: <https://www.officeforapprentices.org.uk/advice-and-guidance/the-register/the-ofs-register/>.

G. Entry requirements

For current entry tariff point requirements, please refer to the relevant page for the Course on the University website or on the online prospectus.

In addition, applicants must be employed in England and have the right to work in the UK and meet the ESFA funding eligibility criteria. Please refer to [Apprenticeship funding rules for main providers](#).

The programme is subject to the University's Principles, Policies and Regulations for the Admission of Apprentices to Undergraduate and Taught Postgraduate Programmes (in [UPR SA03](#)), along with associated procedures. These will take account of University policy and guidelines for assessing accredited prior certificated learning (APCL) and accredited prior experiential learning (APEL).

If you would like this information in an alternative format please contact:
HHAQ@herts.ac.uk

If you wish to receive a copy of the latest External Examiner's Report for the programme, please email a request to aqo@herts.ac.uk

BSc (Hons) Digital & Technology Solutions (Software Engineer)

Table 2: Development of Intended Programme Learning Outcomes in the Constituent Modules

This map identifies where the programme learning outcomes are delivered and assessed in the constituent modules. It provides (i) an aid to academic staff in understanding how individual modules contribute to the programme aims (ii) a checklist for quality control purposes and (iii) a means to help apprentices monitor their own learning, personal and professional development as the programme progresses.

		Programme Learning Outcomes (as identified in section 1 and the following page)																	
		Knowledge & Understanding						Intellectual Skills	Practical Skills					Transferable Skills					
	Module Title	Module Code	A1	A2	A3	A4	A5	A6	B1	C1	C2	C3	C4	C5	D1	D2	D3	D4	D5
Level 4	System, Platform and Digital Solutions Management	4COM2016	X			X			X		X	X	X					X	
	Problem-Solving and Programming	4COM2015		X						X									
	Fundamentals of Business Analysis and Digital Transformation	4COM2014			X	X	X		X		X	X	X		X	X	X	X	
	Data Modelling and Analysis	4COM2013		X						X									
Level 5	Software Engineering	5COM2014		X						X					X				
	Networks, Operating Systems and Protocols	5COM2012		X							X								
	Digital Solutions for the Enterprise	5COM2010	X		X		X				X	X	X			X		X	X
	Full-Stack Development and Configuration	5COM2011						X						X					
Level 6	Information Operations and Security	6COM2026				X			X	X	X	X			X				
	Research and Team Project	6COM2027	X		X		X		X				X		X	X	X	X	X
	Development and Management of Large-Scale Software Systems	6COM2023						X						X					
	Final Project for EPA (Software Engineer)	6COM2025	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

KEY TO PROGRAMME LEARNING OUTCOMES

Knowledge and Understanding

- A1. Demonstrate knowledge and understanding of the underlying principles of scientific & computational thinking that underpin the development and exploitation of Information Technology, including the application of the scientific method to problem solving, the use of modelling techniques, and the complexity of interactions between agents, both humans and programmed systems. [Duties: 2, 6, 10, 13]
- A2. Demonstrate knowledge and understanding of the essential facts, theories and principles relevant to the engineering of technology solutions including information systems, systems development, data management, cyber security, IT project management, and computer/ network infrastructure. [Duties: 3, 7, 11, 12]
- A3. Demonstrate knowledge and understanding of the context within which technology solutions are deployed including business organisation, meeting business requirements and recognising practical constraints. [Duties: 1, 5, 8, 14]
- A4. Demonstrate knowledge and understanding of recognised methodologies and tools for the specification, design, development, test, implementation, support and critical evaluation of computer-based systems. [Duties: 2, 4, 9]
- A5. Demonstrate knowledge and understanding of the wider considerations involved for professional practice, including the legal, social, ethical, professional and environmental issues. [Duties: 14, 15, 9]
- A6. The engineering principles and practices behind all stages of the software development process including requirements, analysis, design, development, overall management of software development processes and approaches, and the provision of security robustness. [Duties: 16, 17, 18, 19, 20, 21, 22, 23]

Practical Skills

- C1. Be able to specify, design and develop computer- based systems deploying professional techniques, notations, methods and tools (including software tools) as an individual or as part of a team. [Duties 11, 3, 12, 4]
- C2. Be able to evaluate computer-based systems in respect of quality attributes and trade-offs. [Duties 1, 4, 6, 7, 13]
- C3. Be able to plan and manage projects to develop and to deploy computer-based systems, recognising any risks, security and safety aspects. [Duties 2, 4, 5, 9, 13]
- C4. Be able to devise effective solutions for complex problems, including those with incomplete information, applying a range of techniques both technical and non-technical, including dialogue with all stakeholders. [Duties 6, 8, 9, 10, 14, 15].
- C5. Design, build and test high quality, secure software solutions, with the ability to deploy the high level of responsibility required for applying engineering principles to all stages of the software development process. [Duties 16, 17, 18, 19, 20, 21, 22, 23]

Intellectual Skills

B1. Understand and apply essential concepts, principles and practices of the subject in the context of well-defined scenarios, showing judgement in the selection and application of tools and techniques [SBS, 4.6; Duties 1, 2, 4, 6, 14]

Transferable Skills

- D1. Be capable of analytical and critical thinking, of reflection on own and others work, and be able to explain, justify and otherwise defend an argument, interacting as appropriate, with reference to academic and professional issues and conventions. [Duties 1, 4, 12, 14]
- D2. Self-manage learning and work including time management, self-awareness, independence and initiative, and including the identification of personal needs for continuing professional development. [Duties 9, 14, 15]
- D3. Communicate effectively orally, in writing and visually using the conventions, vocabulary and form of both academic expression and professional practice, including mathematical, informal and diagrammatic modes of discourse. [Duties 8, 10]
- D4. Work effectively and confidently as a member of a team, understanding the role of leadership including setting direction, negotiation, and taking responsibility. [Duties 2, 5, 8, 10, 15]
- D5. Be able to take responsibility as a professional, being aware of the broader impact of activities in the workplace on the organisation, society and the environment. [Duties 5, 14, 15]

BSc (Hons) Digital & Technology Solutions (Cyber Security Analyst)

Table 2: Development of Intended Programme Learning Outcomes in the Constituent Modules

This map identifies where the programme learning outcomes are delivered and assessed in the constituent modules. It provides (i) an aid to academic staff in understanding how individual modules contribute to the programme aims (ii) a checklist for quality control purposes and (iii) a means to help apprentices monitor their own learning, personal and professional development as the programme progresses.

		Programme Learning Outcomes (as identified in section 1 and the following page)																		
		Knowledge & Understanding							Intellectual Skills	Practical Skills						Transferable Skills				
	Module Title	Module Code	A1	A2	A3	A4	A5	A7	B1	C1	C2	C3	C4	C6	D1	D2	D3	D4	D5	
Level 4	System, Platform and Digital Solutions Management	4COM2016	X			X			X		X	X	X					X		
	Programming	4COM2015		X						X										
	Fundamentals of Business Analysis and Digital Transformation	4COM2014			X	X	X		X		X	X	X		X	X	X	X		
	Data Modelling and Analysis	4COM2013		X						X										
Level 5	Software Engineering	5COM2014		X						X					X					
	Networks, Operating Systems and Protocols	5COM2012		X							X									
	Digital Solutions for the Enterprise	5COM2010	X		X		X				X	X	X			X		X	X	
	Security Assessment and Incident Response	5COM2013						X						X						
Level 6	Information Operations and Security	6COM2026				X			X	X	X	X			X					
	Research and Team Project	6COM2027	X		X		X		X				X		X	X	X	X	X	
	Cyber Security Compliance and Governance	6COM2022						X						X						
	Final Project for EPA (Cyber Security)	6COM2024	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

KEY TO PROGRAMME LEARNING OUTCOMES

Knowledge and Understanding

- A1. Demonstrate knowledge and understanding of the underlying principles of scientific & computational thinking that underpin the development and exploitation of Information Technology, including the application of the scientific method to problem solving, the use of modelling techniques, and the complexity of interactions between agents, both humans and programmed systems. [Duties: 2, 6, 10, 13]
- A2. Demonstrate knowledge and understanding of the essential facts, theories and principles relevant to the engineering of technology solutions including information systems, systems development, data management, cyber security, IT project management, and computer/ network infrastructure. [Duties: 3, 7, 11, 12]
- A3. Demonstrate knowledge and understanding of the context within which technology solutions are deployed including business organisation, meeting business requirements and recognising practical constraints. [Duties: 1, 5, 8, 14]
- A4. Demonstrate knowledge and understanding of recognised methodologies and tools for the specification, design, development, test, implementation, support and critical evaluation of computer-based systems. [Duties: 2, 4, 9]
- A5. Demonstrate knowledge and understanding of the wider considerations involved for professional practice, including the legal, social, ethical, professional and environmental issues. [Duties: 14, 15, 9]
- A7. Demonstrate in-depth and broad understanding of network infrastructure, software and data to identify where threat and hazard can occur, including the main types of security and the main attack techniques. [Duties: 41, 42, 43, 44, 45, 46]

Intellectual Skills

Practical Skills

- C1. Be able to specify, design and develop computer-based systems deploying professional techniques, notations, methods and tools (including software tools) as an individual or as part of a team. [Duties 11, 3, 12, 4]
- C2. Be able to evaluate computer-based systems in respect of quality attributes and trade-offs. [Duties 1, 4, 6, 7, 13]
- C3. Be able to plan and manage projects to develop and to deploy computer-based systems, recognising any risks, security and safety aspects. [Duties 2, 4, 5, 9, 13]
- C4. Be able to devise effective solutions for complex problems, including those with incomplete information, applying a range of techniques both technical and non-technical, including dialogue with all stakeholders. [Duties 6, 8, 9, 10, 14, 15].
- C6- Implement, maintain and support the security controls that protect an organisation's systems and data assets from threats and hazards, with the ability to ensure that security technologies and practices operate in accordance with an organisation's policies and standards, to perform vulnerability assessments, and to respond to incidents. [Duties 41, 42, 43, 44, 45, 46]

Transferable Skills

B1. Understand and apply essential concepts, principles and practices of the subject in the context of well-defined scenarios, showing judgement in the selection and application of tools and techniques [SBS, 4.6; Duties 1, 2, 4, 6, 14].

D1. Be capable of analytical and critical thinking, of reflection on own and others work, and be able to explain, justify and otherwise defend an argument, interacting as appropriate, with reference to academic and professional issues and conventions. [Duties 1, 4, 12, 14]

D2. Self-manage learning and work including time management, self-awareness, independence and initiative, and including the identification of personal needs for continuing professional development. [Duties 9, 14, 15]

D3. Communicate effectively orally, in writing and visually using the conventions, vocabulary and form of both academic expression and professional practice, including mathematical, informal and diagrammatic modes of discourse. [Duties 8, 10]

D4. Work effectively and confidently as a member of a team, understanding the role of leadership including setting direction, negotiation, and taking responsibility. [Duties 2, 5, 8, 10, 15]

D5. Be able to take responsibility as a professional, being aware of the broader impact of activities in the workplace on the organisation, society and the environment. [Duties 5, 14, 15]

Table 3: Development of Graduate Attributes in the Constituent Modules

This map identifies where the Graduate Attributes are delivered in the constituent modules. It provides (i) an aid to academic staff in understanding how individual modules contribute to the development of the Graduate Attributes (ii) a checklist for quality control purposes and (iii) a means to help apprentices monitor their own personal and professional development as the programme progresses. [Note that there is no requirement for the Graduate Attributes to be assessed through these modules]

D = Delivered

	Module Title	Module Code	Professionally Focused	Globally Minded	Sustainability Driven	Digitally capable & confident	Inclusive and collaborative	Evidenced based and Ethical
Level 4	System, Platform and Digital Solutions Management	4COM2016			D	D		D
	Problem-Solving and Programming	4COM2015			D	D		
	Fundamentals of Business Analysis and Digital Transformation	4COM2014	D	D	D		D	D
	Data Modelling and Analysis	4COM2013				D	D	
Level 5	Software Engineering	5COM2014		D		D	D	
	Networks, Operating Systems and Protocols	5COM2012			D	D	D	
	Digital Solutions for the Enterprise	5COM2010	D	D	D	D		D
	Specialist module level 5	5COM2011/ 5COM2013	D	D	D	D	D	D
Level 6	Information Operations and Security	6COM2026	D	D	D		D	D
	Research and Team Project	6COM2027	D	D		D	D	D
	Specialist module level 6	6COM2022/ 6COM2023	D	D	D	D	D	D
	Final Project for EPA (specialism)	6COM2024/ 6COM2025	D	D	D	D	D	D

Section 2

Programme management

Relevant QAA subject benchmarking statements	Computing (2022), Digital & Technology Solutions Professional Level 6 degree apprenticeship occupational standard
Type of programme	Undergraduate
Date of validation/last periodic review	May 23
Date of production/ last revision of PS	June 23
Relevant to level/cohort	All students (apprentices) entering September 2023
Administrative School	School of Physics, Engineering & Computer Science
Language of Delivery	English

Table 4 Course structure

Sta

Course details			
Course Code	Course Description	HECOS	UCAS
PEDASE	BSc (Hons) Digital and Technology Solutions (Software Engineer)	100366	N/A
PEDACSA	BSc (Hons) Digital and Technology Solutions (Cyber Security Analyst)	100366	N/A