Programme specification

1. Overview / factual information

Programme/award title(s)	FD Cloud Computing with Cyber Security
Teaching Institution	Northern Regional College
Awarding Institution	The Open University (OU)
Date of first OU validation	
Date of latest OU (re)validation	N/A
Next revalidation	
Credit points for the award	120 credits at Level 4 120 credits at Level 5 Total – 240 credit points - FD
UCAS Code	N/A
HECoS Code	N/A
LDCS Code (FE Colleges)	N/A
Programme start date and cycle of starts if appropriate.	Sept 2024
Underpinning QAA subject benchmark(s)	Subject Benchmark Statement Computing
Other external and internal reference points used to inform programme outcomes. For apprenticeships, the standard or framework against which it will be delivered.	Skills Strategy for Northern Ireland 10 X Strategy Government Industrial Strategy – Economy 2030; Northern Regional College Development Plan; QAA UK Quality Code for Higher Education, Part A; Feedback from industry (Industrial Advisory Board) and student focus groups; Northern Ireland Skills Barometer; Professional Certifications: Microsoft, & Cisco; Benchmarks: Subject Benchmark Statement: Computing March 2022 (qaa.ac.uk)
Professional/statutory recognition	N/A
For apprenticeships fully or partially integrated Assessment.	
Mode(s) of Study (PT, FT, DL, Mix of DL & Face-to-Face) Apprenticeship	PT. FT

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

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

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

Duration of the programme for each mode of study	2 Years Full Time 3 Years Part Time
Dual accreditation (if applicable)	N/A
Date of production/revision of this specification	N/A

2. Programme overview

2.1 Educational aims and objectives

The programme aims to provide future computing professionals with a diverse set of industry-relevant skills, with a particular emphasis on Cloud Computing integrated with Cyber Security. Highlighted by industry, the modules are structured to enhance both foundational and contemporary proficiencies within the cloud and security environments. Fostering a curriculum led by experienced faculty to teach practical vocational knowledge and by prioritising Cloud Computing with Cyber Security, the programme is tailored to service industry needs and facilitate students' career advancement and personal growth.

The course is dedicated to nurturing students' personal and intellectual capacities, adopting a commitment to continuous professional development and lifelong learning. By emphasising Cloud Computing with Cyber Security alongside Databases, Computer Systems, Development, and IoT using cloud technology, the programme aims to offer a comprehensive education that prepares graduates for successful careers in the computing industry or advanced academic pursuits.

The programme's principal goal is to cultivate graduates who can leverage their expertise, specialised skills, and understanding of modern computing to contribute economically to the local and broader economies of Northern Ireland, the UK, and beyond. Through a curriculum that integrates theoretical principles with practical applications, students will develop a deep understanding of cloud and cyber

fundamentals while acquiring recognised entry-level certifications from Microsoft and Cisco.

Graduates will possess a versatile skill set that not only enables them to excel in computing roles but also promotes critical thinking, assessment, and a thirst for continual learning. By instilling a commitment to lifelong learning, the programme aims to empower graduates to adapt and thrive in diverse computing environments, whether in graduate employment or further academic pursuits within the computing industry.

- Broaden access to Higher Education by providing a vocational programme.
- Address the known requirement for employees with the knowledge and skills provided by an intermediate-level qualification in Northern Ireland, Great Britain and elsewhere.
- Equip individuals with the needed skills, knowledge, and understanding for employment within the cloud computing and cyber security sector.
- Advance collaboration between theoretical concepts and practical applications in cloud and cyber security activities.
- Safeguard alignment between academic rigour and industry certifications.
- Provide practical industrial experience through project-based learning strategies and the work-based learning module, encouraging student skill development and preparing them for both employment opportunities and further academic pursuits.
- Support students in cultivating interpersonal skills and taking ownership of their professional development.
- Emphasise the significance of professional, moral, ethical, and legal considerations specific to cloud computing and cyber security.
- Facilitate progression onto an Honours Degree in this field or a related area.

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)

At NRC, our Computing courses span from Level 2 to Level 5. We anticipate that students currently enrolled in Level 3 programmes will be enticed by the chance to pursue a university-accredited Foundation Degree in Cloud Computing with Cyber Security, right here in their local community.

We offer a comprehensive range of options, including full-time, part-time, and Higher Level Apprenticeships (HLA), all of which provide avenues for academic and industry career progression.

Both our part-time and HLA programmes run concurrently, allowing students flexibility in their learning journey. Graduates from both fulltime and part time pathways can

progress to a Level 6 top-up degree (our application to run a Level 6 top-up programme has been submitted for 2025) or to pursue further studies at university.

Additionally, NRC offers a diverse array of industry-certified Microsoft Cloud, Cloud Management and Development, and Cisco Networking and Cyber certified courses. These entry-level certifications are seamlessly integrated into our curriculum, providing students with a solid foundation for further professional certification advancement.

Students interested in obtaining further professional certifications are encouraged to do so at their own expense, with guidance and support from our faculty.

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.
In the second semester of Year 2 for full-time learners and Year 3 for part-time learners, a 40-credit work-based learning module will be incorporated into the programme. NRC integrates Project-Based Learning into all modules, enabling students to showcase various meta-skills by engaging in real-world projects throughout their coursework. This approach not only provides an industry-oriented perspective but also highlights students' comprehension of their learning journey.

2.4 List of all exit awards
Certification of Higher Education in Cloud Computing with Cyber Security – requires a minimum of 120 credits at Level 4. At level 4 the student can achieve the following additional certifications: Microsoft Information Technology Specialist in Cloud Computing Microsoft Information Technology Specialist in Databases Microsoft Information Technology Specialist in Device Configuration and Management Cisco Award in Networking Essentials Foundation Degree in Cloud Computing with Cyber Security – requires 240 credits (a minimum of 120 credits must be at Level 5). At level 5 the student can achieve the following additional certifications: Microsoft Information Technology Specialist in HTML5 Application Development Cisco award in Network Support and Security Cisco award in Introduction to Cyber Security Cisco award in Introduction to IoT and Digital Transformation

3. Programme structure and learning outcomes

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

September Intake – Full-time

Programme Structure - LEVEL 4 (Full-time)					
Compulsory modules	**Credit points**	**Optional modules**	**Credit points**	**Is module compensatable?**	**Semester runs in**
Cloud Fundamentals	20			Yes	Yr. 1 Sem 1
Programming Fundamentals	20			Yes	Yr. 1 Sem 1
Computer Systems	20			Yes	Yr. 1 Sem 1
Databases and Data Analytics	20			Yes	Yr. 1 Sem 2
Network Essentials	20			Yes	Yr. 1 Sem 2
Computational Mathematics	20			Yes	Yr. 1 Sem 2

September Intake – HLA /Part time

Programme Structure - LEVEL 4 (HLA/Part time)					
Compulsory modules	**Credit points**	**Optional modules**	**Credit points**	**Is module compensatable?**	**Semester runs in**
Cloud Fundamentals	20			Yes	Yr. 1 Sem 1
Programming Fundamentals	20			Yes	Yr. 1 Sem 1
Computer Systems	20			Yes	Yr. 1 Sem 2
Databases and Data Analytics	20			Yes	Yr. 2 Sem 2
Computational Mathematics	20			Yes	Yr. 2 Sem 1
Network Essentials	20			Yes	Yr. 2 Sem 1

Intended learning outcomes at Level 4 are listed below:

Learning Outcomes – LEVEL 4	
3A. Knowledge and understanding	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
A1 Demonstrate an understanding of essential concepts, principles and practices relating to the Cloud Computing and Cyber Security Industry. A2 Demonstrate an understanding of essential concepts, principles and practices of cloud computing and cyber security in the context of well-defined scenarios, showing an ability to select and apply appropriate industry relevant skills and techniques. A3 Produce work involving problem identification, analysis, design and development and securing systems, with appropriate documentation.	Learning and Teaching Methods: The development of subject-related qualities primarily occurs through a variety of instructional methods, including lectures, tutorials, seminars, practical exercises, directed reading, videos, IT-based resources, case studies, integration of virtual learning environments (VLEs), and experiential learning. Tutorials aim to promote reflective learning and develop generic skills, while project-based and work-based learning also play significant roles in the teaching process. Exploring, analysing, and evaluating industry practices enables learners to enhance their academic writing skills, make judgments, and develop arguments related to cyber security and digital forensics, thus expanding their knowledge and understanding at Level 4. This familiarity with terminology and context at Level 4 serves as the foundation for Level 5.

Learning Outcomes – LEVEL 4	
3A. Knowledge and understanding	
A4 Demonstrate knowledge of the professional, legal, social, moral, and ethical issues relevant to the cloud computing and cyber security industry.	Independent Study Supported by VLE/Course Notes: Students are encouraged to engage in independent study by exploring written materials or utilising online resources available through the college's Learning Resource Centre (LRC). Textbooks/eBooks: A core resource to supplement and support curriculum, extending learning outside and inside the classroom to assist, give direction, and facilitate assessment research and independence to develop confidence of learning. Assessment strategies are designed to provide students with clear direction for their future development. Self-reflection is an integral component of formative assessment, empowering students to actively engage in their own learning process. Summative assessment delivers concise and constructive feedback to learners, helping them internalise good practices for future knowledge acquisition. Moreover, it guides learners on areas for improvement and encourages further expansion of their knowledge, especially as they transition from Level 4 to Level 5 and beyond. Assessment Methods: Summative assessment is regularly conducted through various means, including assessment materials which may be marked by lecturers or by computer marked assignments (multiple choice, short answer, programming), class tests and technical aspects such as:

Learning Outcomes – LEVEL 4	
3A. Knowledge and understanding	
	Presenting knowledge of applications and systems through assignments. Documented practical and associated demonstrations. Formative feedback is provided continuously throughout the learning and assessment process, while summative feedback is utilised to pinpoint areas of strength and identify opportunities for improvement, thereby enhancing the knowledge, skills, and abilities of learners.

3B. Cognitive skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
B1 Analyse criteria and specifications appropriate to specific problems and plan strategies to provide secure cloud solutions. B2 Demonstrate computational thinking relating to everyday life. B3 Deploy theory, practices and tools for the design and implementation of a range of cloud computing and cyber security solutions relating to industry. B4 Implement cloud computing and cyber security industry-related guidelines in relation to design, deployment and testing of developed solutions.	Learning and Teaching Methods: Digital and Independent research: Literacy will be evident throughout modules through online reading materials, multimedia presentations, use of online resources and the internet for research, custom made learning materials such as videos\quizzes etc., bespoke software tutorials. Students will complete independent research through case studies to develop critical thinking, reasoning and problem solving to get a better understanding of real-life context. Students are tasked with honing their cognitive skills through the development of arguments and hypotheses based on encountered scenarios. They engage in diverse topics, fostering critical analysis of their findings. Intellectual growth primarily occurs through lectures,

3B. Cognitive skills	
	seminars, tutorials, assessments, practical exercises, experimental work, projects, and independent study. This pedagogical approach promotes the development of both meta-skills and subject-specific qualities, fostering an enthusiasm among students to deepen their understanding and pursue further knowledge and skills through active learning. At Level 4, students are introduced to fundamental industry practices, laying the groundwork for subsequent analysis and exploration at Level 5. Assessment Methods: Summative assessment is regularly conducted through various means including assessment materials which may be marked by lecturers or by computer marked assignments (multiple choice, short answer, programming), class tests and technical aspects such as: Presenting knowledge of applications and systems through assignments. Documented practical and associated demonstrations. Formative feedback is provided continuously throughout the learning and assessment process, while summative feedback is utilised to pinpoint areas of strength and identify opportunities for improvement, thereby enhancing the knowledge, skills, and abilities of learners.

3B. Cognitive skills	
	Assessment strategies provide students with clear guidance for future development. Self-reflection and peer evaluation play integral roles in formative assessment, aiding in students' ongoing growth and improvement.

3C. Practical and professional skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
C1 Design and construct usable secure cloud-based systems using professional tools and practices to meet the needs of an industry-based scenario. C2 Effectively deploy appropriate tools for documentation of secure cloud-based systems. C3 Work effectively as an individual or as part of a team to complete a project to industry standards for cloud and cyber security.	Learning and Teaching Methods: The instructional approach places particular emphasis on lectures, practical and tutorial experimental work, the project briefs are designed to emulate real-world scenarios and industry methods, enriching the teaching, and learning experience. These briefs provide invaluable opportunities for students to refine both practical and professional skills, yielding outstanding outcomes. Students will have access to modern, industry-standard equipment and industry methods to apply their knowledge and understanding of the importance of documentation. Individual Work: Students produce independent work using a variety of information sources and practical experience leading to engagement and stimulation of learning. Group Work: students will work as a part of a team, where peer assessment, overseen by the tutor, will reflect each candidate’s

3C. Practical and professional skills	
	contribution to the team and effectiveness as a team member while the team is working on the project. Navigating within specified timeframes and resource constraints cultivates professional skills essential for any workplace environment. Foundational practical skills are developed throughout Level 4 modules, equipping students with the essential groundwork necessary for acquiring new techniques and practices as they progress through the programme preparing them for Level 5. Assessment Methods: Summative assessment is regularly conducted through various means including assessment materials which may be marked by lecturers or by computer marked assignments (multiple choice, short answer, programming), class tests and technical aspects such as: Presenting knowledge of applications and systems through assignments. Documented practical and associated demonstrations. Formative feedback is provided continuously throughout the learning and assessment process, while summative feedback is utilised to pinpoint areas of strength and identify opportunities for improvement, thereby enhancing the knowledge, skills, and abilities of learners.

3D. Key/transferable skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
D1 Communicate effectively with others in both written and oral forms. D2 Develop independent learning skills including time management and organisational skills. D3 Effectively use interpersonal skills to work with others and function effectively as a team member. D4 Problem solve in both familiar and unfamiliar situations making effective use of information retrieval skills and learning resources.	Learning and Teaching Methods: Throughout the individual, group work and independent learning, students will increase their confidence, with an emphasis on delivering foundational skills, communicating within their research, academic writing and referencing which are integrated into various components supported by lecturers and assignments. Teaching and learning activities are contextualised within the professional, social, ethical, and legal aspects relevant to the cloud and cyber security. Collaboration and communication techniques are integrated into all learning activities, including group discussions, simulations, project-based learning, report writing, and utilisation of blended and virtual learning platforms. Throughout the programme, learners are presented with essential information that they must independently research, analyse, and interpret. Independent reading is encouraged to broaden understanding of specific problems and design principles, aiming to challenge and stretch learners' abilities at Level 4 in preparation for Level 5. Assessment Methods: Summative assessment is regularly conducted through various means including assessment materials which may be marked by lecturers or by computer marked assignments (multiple choice, short answer, programming), class tests and technical aspects such as:

3D. Key/transferable skills	
	Presenting knowledge of applications and systems through assignments. Documented practical and associated demonstrations. Formative feedback is provided continuously throughout the learning and assessment process, while summative feedback is utilised to pinpoint areas of strength and identify opportunities for improvement, thereby enhancing the knowledge, skills, and abilities of learners.

Certificate of Higher Education in Cloud Computing with Cyber Security

September Intake - Full Time

Programme Structure - LEVEL 5 (Full-time)					
Compulsory modules	**Credit points**	**Optional modules**	**Credit points**	**Is module compensatable?**	**Semester runs in**
Network Security	20			Yes	Yr. 2 Sem 1
Cloud Technologies and Development	20			Yes	Yr. 2 Sem 1
Cyber Security	20			Yes	Yr. 2 Sem 1
IoT Development & Security	20			Yes	Yr. 2 Sem 2
Work-based Learning	40			No	Yr. 2 Sem 2

September Intake – HLA /Part time

Programme Structure - LEVEL 5 (HLA/Part time)					
Compulsory modules	**Credit points**	**Optional modules**	**Credit points**	**Is module compensatable?**	**Semester runs in**
Network Security	20			Yes	Yr. 2 Sem 2
Cloud Technologies and Development	20			Yes	Yr. 2 Sem 2
Cyber Security	20			Yes	Yr. 3 Sem 1
IoT Development & Security	20			Yes	Yr. 3 Sem 1
Work-based Learning	40			No	Yr. 3 Sem 2

Intended learning outcomes at Level 5 are listed below:

Learning Outcomes – LEVEL 5	
3A. Knowledge and understanding	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
A1 Demonstrate an advanced understanding of essential concepts, principles and practices relating to cloud computing and cyber security industry. A2 Demonstrate a detailed understanding of essential concepts, principles, and practices of computing in the context of well-defined scenarios, showing judgement in the selection and application of appropriate industry relevant skills and techniques in cloud computing and cyber security. A3 Develop industry standard solutions involving problem identification, analysis, design, and development of a system, with appropriate documentation. A4 Demonstrate knowledge of the professional, legal, social, moral, and ethical issues relevant to the cloud computing and cyber security industry environment.	Learning and Teaching Methods: The lectures will offer a comprehensive look at the essential content of the core modules, utilising examples, and case studies when suitable. Students will be motivated to delve deeper into lecture topics through independent study to prepare for practical sessions. Practical sessions will offer a chance for targeted problem-solving. Additionally, short, weekly exercises employing various mediums will be employed to offer regular, informal feedback. Acquisition of subject-related qualities is facilitated through a variety of methods including lectures, seminars, directed and self-directed reading, utilization of videos and IT-based resources, case studies, integration of virtual learning environment (VLE), with additional resources in the college Learning Resource Centre (LRC) and experiential learning opportunities. Group activities and individual tutorials play fundamental role in fostering reflective learning and nurturing generic skills. Real-world projects serve as practical avenues for both learning and teaching. Students will be directed and guided to appropriate reading material by the lecturer. Textbooks\eBooks: A resource to supplement and support curriculum which allows independent study to learning outside and inside the

Learning Outcomes – LEVEL 5	
3A. Knowledge and understanding	
	classroom to assist, give direction, and facilitate research and independence to develop confidence in learning. At Level 5, students are encouraged to contextualise their work, conduct research to broaden their understanding, and strive for continuous improvement in their grasp and application of theoretical contexts and concepts encountered. Project-based learning challenges students to independently apply their acquired knowledge in professional practice, preparing them for the demands of Level 6 studies or entry into industry. Assessment Methods: Summative assessment is regularly conducted through various means including assessment materials which may be marked by lecturers or by computer-marked assignments (multiple choice, short answer, programming), class tests and technical aspects such as: • Presenting knowledge of applications and systems through assignments. • Documented practical and associated demonstrations. Formative feedback is provided continuously throughout the learning and assessment process, while summative feedback is utilised to pinpoint areas of strength and identify opportunities for improvement, thereby enhancing the knowledge, skills, and abilities of learners.

3B. Cognitive skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
B1 Critically analyse criteria and specifications appropriate to specific problems and develop strategies for their solutions relating to the computing industry. B2 Demonstrate enhanced computational thinking relating to everyday life. B3 Deploy theory, practices and tools for the specification, design, and implementation of a range of solutions focusing on modern computing systems. B4 Implement industry-related guidelines in relation to specification, design, deployment and testing of developed solutions.	Learning and Teaching Methods: The development of intellectual cognitive skills is fostered through a variety of instructional approaches, including lectures, seminars, tutorials, practical-based activities, independent research and project work, and project-based learning activities. At Level 5, project-based learning takes on a more intricate dimension, presenting students with complex problems that encourage the cultivation of critical thinking, creativity, communication skills, and self-reflection. Lectures will provide students with the key information and knowledge and will form the basis of a learner-centred approach. Group and individual learning at Level 5 guides students towards greater critical awareness, empowering them to formulate ideas, conduct confident research, and experiment to enhance their outcomes. Practicals: These provide an opportunity for students to apply the taught theory and allow for the reinforcement of the material with the lecturer available to provide support and guidance when required. This takes place in the IT rooms and hardware labs and aims to allow students to take control of specialised resources and equipment. Assessment Methods: Summative assessment is regularly conducted through various means, including assessment materials which may be marked by lecturers or by

3B. Cognitive skills	
	computer-marked assignments (multiple choice, short answer, programming), class tests and technical aspects such as: • Presenting knowledge of applications and systems through assignments. • Documented practical and associated demonstrations. Formative feedback is provided continuously throughout the learning and assessment process, while summative feedback is utilised to pinpoint areas of strength and identify opportunities for improvement, thereby enhancing the knowledge, skills, and abilities of learners.

3C. Practical and professional skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
C1 Specify, design, and construct usable computer-based systems using professional tools and practices to meet the needs of an industry-based scenario. C2 Demonstrate an ability to recognise risks and safety aspects in the deployment of a computer-based system. C3 Effectively deploy appropriate tools for documentation of a computer-based system. C4 Work effectively as an individual or as part of a team in a workplace setting.	Learning and Teaching Methods: Structured practical activities form the cornerstone for developing practical and professional skills. These activities encompass team projects, workshops focused on idea generation and solution development, and project-based learning experiences. Guest speakers are incorporated into the course delivery to provide real-world context and enhance the development of practical and professional skills. The work placement serves as an extension of the learning process, allowing learners to build upon the skills nurtured at Level 4 and further enhance them at Level 5.

3C. Practical and professional skills	
	At Level 5, practical and professional skills are integral to all modules, with learners expected to deliver outcomes to professional standards. Emphasis is placed on cultivating independent thinking, problem-solving, analysis, evaluation, and self-reflection skills. Collaborative group work is assessed through individual submissions, supplemented by tutor observation of each candidate's contribution and effectiveness as a team member during project work. Students transition from fundamental technical skills to becoming adaptable and experimental, responding effectively to real-world briefs and work experiences in this ever-evolving and creative industry. They identify and solve complex issues with confidence. Assessment Methods: Summative assessment is regularly conducted through various means, including assessment materials which may be marked by lecturers or by computer-marked assignments (multiple choice, short answer, programming), class tests and technical aspects such as: • Presenting knowledge of applications and systems through assignments. • Documented practical and associated demonstrations. Formative feedback is provided continuously throughout the learning and assessment process, while summative feedback is utilised to pinpoint areas of strength and identify opportunities for improvement, thereby enhancing the knowledge, skills, and abilities of learners.

3C. Practical and professional skills	
	At Level 5, learners must demonstrate their professional practice in the Work-Based Learning module. Success requires displaying independence and making reasoned judgments in a professional setting. Learners present product design and development outcomes during a presentation to a panel of industry experts.

3D. Key/transferable skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
D1 Highly effective communication with others in both written and oral forms. D2 Develop independent learning skills, including time management and organisational skills, by taking responsibility for personal and professional development. D3 Effectively use interpersonal skills to work with others and function effectively as a team member. D4 Problem solve at industry standard, in both familiar and unfamiliar situations making effective use of information retrieval skills and learning resources.	Learning and Teaching Methods: Key/transferable skills will be developed through lectures, seminars, and tutorials. This also includes the basic ICT skills, information management, library research skills and preparation for placement activities. All transferable skills apply to theoretical disciplines, practical and project-based activities. Other learning and teaching methodologies include presentations and demonstration, and peer learning. Learners will be provided with key information which they will independently research, analyse, and interpret, then seek out further reading where they must independently broaden their understanding of specific problems and creative design principles. The fundamental design of the programme is to stretch learners, develop their skills at Level 5 as preparation for Level 6 or employment. Project Based Learning and work-based learning module at Level 5 enable students to work in industry (or simulated) contexts driving them to become effective in their time management, taking responsibility for

3D. Key/transferable skills	
	their work, and managing working with others in a professional environment. Creative thinking and critical analysis are applied to all aspects of the programme and will be further fostered and encouraged through weekly lessons. Discussion and critiques support the development of problem resolution at a higher intellectual level. At Level 5, students are encouraged to develop their self-reflection and set targets, reflecting on feedback, and responding to this. Assessment Methods: Summative assessment is regularly conducted through various means including assessment materials which may be marked by lecturers or by computer marked assignments (multiple choice, short answer, programming), class tests and technical aspects such as: • Presenting knowledge of applications and systems through assignments. • Documented practical and associated demonstrations. Formative feedback is provided continuously throughout the learning and assessment process, while summative feedback is utilised to pinpoint areas of strength and identify opportunities for improvement, thereby enhancing the knowledge, skills, and abilities of learners.

4. Distinctive features of the programme structure

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

Programme Structure and Delivery:

The course offers both full-time (2 academic years, 4 semesters) and part-time (3 academic years, 6 semesters) modes of delivery. Full-time students undertake 120 credits of study per year (across 2 semesters), while part-time students pursue 80 credits per year (also across 2 semesters). Level 5 modules build upon the foundational knowledge and skills acquired at Level 4.

The allocation of time for lectures, practical activities, and independent study varies for each module. Typically, students are expected to dedicate 200 hours of study per module, excluding the Work Based Learning module.

The Work Based Learning module, designed to provide students with firsthand experience in a computing work environment. This module, valued at 40 credit points at Level 5, involves 400 hours which includes tutorial, practical, independent learning, and industrial placement. Students also produce a comprehensive report detailing their learning during the placement, which they present formally to the course team.

Full-time students undertake the Work Based Learning module in Semester 2 of Year 2, while Higher Level Apprenticeship (HLA) and part-time students complete it in Semester 2 of Year 3. During the placement, each student is assigned an industrial supervisor by the placement organisation, while a member of the course team acts as the placement tutor, ensuring effective communication and support throughout the placement period.

Students are introduced to the concept of work placement during Level 4 tutorials, where they are encouraged to actively seek suitable placements, typically within their local area. In instances where a student struggles to find a placement, the placement tutor provides alternative options from a pool of local employers. All placements must be formally confirmed by the host organisation before the commencement of the Work Based Learning module. Ongoing consultations occur during tutorials to ensure the suitability of the chosen placement.

Programme Resources:

NRC consistently invests in resources for computing programmes, including physical resources and staff skill development. The college provides dedicated teaching facilities on each campus, featuring:

Dedicated computer rooms across campuses x 20 PC stations with additional collaborative areas. In addition, cloud services and curriculum focused software applications

- Internet of Things devices and components
- 3D Printers
- Virtual Reality
- Wide range of components supporting computer technology
- Access to Azure cloud platform
- Interactive whiteboards in teaching environments
- Dedicated tablet devices for application deployment and testing

Curriculum technology needs are regularly reviewed to align with industry practices and accommodate emerging trends. The school budget allocation allows for resource procurement, and capital funds can be secured through business cases to support resource acquisition from a resource or estates perspective.

Device Loan Scheme:

The college operates a device loan scheme to support learners lacking access to necessary technology for remote learning. All loaned devices are configured to securely connect to college platforms, including cloud-based systems. Additionally, the School of Adv, Computing offers a system for loaning specialist hardware such as IoT kits.

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

The support provided to students and their learning covers several avenues:

- A thorough programme induction for new students.
- Availability of student programme and module handbooks on the VLE (Canvas) for convenient reference.
- An HE Student Handbook, accessible on the college website and VLE, which outlines internal processes, codes of conduct, academic practices, support services, and general college information.
- Assignment of students to a designated year tutor.
- Accessibility to the Course Director and academic staff for student inquiries and assistance.
- Student representation on course committees and HE Review Boards.

- Opportunities for students to address general concerns through the student/staff consultative committee.
- Library and computer services offering facilities and assistance.
- Provision of student email accounts and full access to the College VLE (Canvas).
- Support services provided by the Student Support Hub, encompassing young career support, health, counselling and guidance, careers advice, financial assistance, learning support, pastoral care, access to the library and resource centre, and involvement in the Students Union.
- Dedicated support from a Work Based Learning tutor.
- Establishment of procedures for assessing and accommodating the additional support needs of students with disabilities, following DSA guidance.
- Provision of weekly timetabled tutorial sessions for all students.
- Access to the college email system for students to contact tutors for support and advice during and outside of office hours.
- Utilisation of the college Microsoft Teams system for students to communicate with tutors while working remotely.
- Implementation of a robust complaints and appeals process, available for students to utilise as needed.

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

Admission Criteria Full-time

To be eligible to apply for this programme, applicants must have a suitable Level 3 qualification, for example, a BTEC National Diploma or Certificate or a BTEC Extended Diploma or a BTEC Subsidiary Diploma in Computing or IT, or suitable subjects at GCE A-level. Applicants should have a minimum of 64 UCAS tariff points, but entry requirements may be enhanced depending on demand and other factors. Such enhancements may result in preference given to those applicants with additional Level 3 computing-related subjects.

Applicants must also have at least 4 GCSE grades at C or above to include English (or an equivalent University-approved qualification such as Level 2 Essential Skills in Communication and Essential Skills in Numeracy. Applicants with a National or Extended Diploma (or other relevant qualification) in subjects other than Computing are also eligible to apply.

Where students wish to have prior education and/or experience considered, in lieu of meeting the full course entry requirements. It will be the College's discretion to consider APEL enquiries.

Admission Criteria for Part-time

To be eligible to apply for this programme, applicants must have a suitable Level 3 qualification, for example a BTEC National Diploma or Certificate or a BTEC Extended Diploma or a BTEC Subsidiary Diploma in Computing or IT, or suitable subjects at GCE A-level. Applicants should have a minimum of 64 UCAS tariff points, but entry requirements may be enhanced depending on demand and other factors. Such enhancements may result in preference given to those applicants with additional Level 3 computing-related subjects.

Applicants must also have at least 4 GCSE grades at C or above to include English (or an equivalent University-approved qualification such as Level 2 Essential Skills in Communication and Essential Skills in Numeracy. Applicants with a National or Extended Diploma (or other relevant qualification) in subjects other than Computing are also eligible to apply.

Where students wish to have prior education and/or experience considered, in lieu of meeting the full course entry requirements. It will be the College's discretion to consider APEL enquiries.

Admission Criteria Higher Level Apprenticeships (HLA)

- Be at least 18 years on or before 1 July in the year they start the course and must satisfy the general entry requirements.
- Achieved GCSE Maths grade C or above, plus English grade C or above (or Essential Skills in Communication and Essential Skills in Numeracy), plus Level 3 qualifications that are equivalent to 56 UCAS points or above.
- Be a new employee in, or about to accept a permanent remunerative employment offer, or an existing employee moving to a new job role that requires a substantial amount of learning and skills development commensurate to the apprenticeship pathway.
- Be employed by a company with a permanent base in Northern Ireland, have a contract of employment in place, be contracted to work a minimum of 21 hours per week (which includes day release/off-the-job directed training) with one employer, and in receipt of the appropriate wage.
- Have achieved all necessary entry qualifications determined by the relevant sector.
- Pass any entry tests specified by the relevant sector.
- Be the minimum school leaving age in Northern Ireland.

Third country nationals, including European Union (EU), European Economic Area (EEA) and Swiss Nationals and their family members, are eligible to undertake an HLA provided they have a right to live and work in the UK.

Where students wish to have prior education and/or experience considered, in lieu of meeting the full course entry requirements. It will be the College will consider APEL enquiries at its discretion.

7. Language of study

The programme will be conducted exclusively in English. International students must meet specific English language requirements as follows:

- English proficiency must meet the Common European Framework of Reference (CEFR) level.
- A minimum B2 level IELTS score of 6.0, with at least 5.5 in all skills, is required.
- Alternatively, a PTE score of 51 or an equivalent English proficiency test approved by the institution is acceptable.

For Tier 4 students, NRC will only recognise a Secure English Language Test (SELT) as valid for issuing a Certificate of Acceptance for Studies (CAS).

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

None

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)

N/A

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

The following processes are in place in accordance with the QAA Foundation Degree Characteristics Statement (2020):

- Cross-marking, internal moderation, and external examining processes are employed to ensure the validity and reliability of the assessment process.
- The Course Committee reviews student feedback from each module.
- Student/staff consultative meetings serve as a platform to address any course-related difficulties encountered by the cohort.
- Annual Course Review procedures incorporate both quantitative and qualitative feedback from each course within a subject area.
- Students have the opportunity to be represented at staff/student consultation meetings.
- Staff teaching performance undergoes annual monitoring.
- Staff appraisal is conducted on a two-year cycle, focusing on the individual development needs of staff members.
- The college annually completes a Self-Evaluation and Quality Improvement Plan for each programme in accordance with the requirements of the Awarding Organisations.
- The College offers a Staff Development Programme to facilitate specific training and development for staff.
- All staff are encouraged to pursue Information & Learning Technology and industry qualifications.
- Views of External Examiners are considered as part of the quality processes, and reporting mechanisms prescribed by Awarding Organisations are adhered to.
- Both informal views and formal written feedback from employers are taken into consideration.
- Student performance data and career progression are monitored annually.
- The Course Director attends annual meetings and workshops provided by either the Awarding Organisation or Validated Institute, contributing to the regulation of codes of practice and course management procedures.

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

N/A

Annexe 1: Curriculum map

Annexe 2: Curriculum mapping against the apprenticeship standard or framework (delete if not required.)

Annexe 3: Notes on completing the OU programme specification template

Annexe 1 - Curriculum map

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

Module Outcomes	A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	B6	B7	B8	C1	C2	C3	C4	C5	C6	C7	C8	D1	D2	D3	D4	D5	D6	D7
Cloud Fundamentals			1						1								1								1						
Programming Fundamentals	1	1							1								1									1		1			
Computer Systems	1									1							1														
Databases and Data Analytics			1									1					1											1			
Network Essentials	1								1								1								1						
Computational Mathematics		1								1									1							1					

Module Outcomes	A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	B6	B7	B8	C1	C2	C3	C4	C5	C6	C7	C8	D1	D2	D3	D4	D5	D6	D7
Network Security	1	1							1								1								1						
Cloud Tech and Development	1										1						1												1		
Cyber Security	1		1	1						1							1	1								1					
IoT Development & Security	1	1							1								1									1					
Work-based Learning		1							1	1							1	1							1						

Annexe 2 - Curriculum mapping against the apprenticeship standard

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

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

Level	Study module/unit	Apprenticeship standard																								
		K1	K2	K3	K4	K5	K6	K7	K8	S1	S2	S3	S4	S5	S6	S7	S8	B1	B2	B3	B4	B5	B6	B7	B8
4																										

Level	Study module/unit	Apprenticeship standard																								
		K1	K2	K3	K4	K5	K6	K7	K8	S1	S2	S3	S4	S5	S6	S7	S8	B1	B2	B3	B4	B5	B6	B7	B8
5																										

Level	Study module/unit	Apprenticeship standard																								
		K1	K2	K3	K4	K5	K6	K7	K8	S1	S2	S3	S4	S5	S6	S7	S8	B1	B2	B3	B4	B5	B6	B7	B8	
6																										

Annexe 3: Notes on completing programme specification templates

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

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

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

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

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

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

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