Programme specification

(Notes on how to complete this template are provide in Annexe 2)

1. Overview/ factual information

Programme/award title(s)	BSc. (Hons) Cyber Security Top-up Exit Award: BSc Cyber Security (Top up)
Teaching Institution	New College Durham
Awarding Institution	The Open University (OU)
Date of latest OU validation	
Next revalidation	
Credit points for the award	120
UCAS Code	
Programme start date	September 2017
Underpinning QAA subject benchmark(s)	Computing (2016)
Other external and internal reference points used to inform programme outcomes	Tech Partnership
Professional/statutory recognition	None
Duration of the programme for each mode of study (P/T, FT,DL)	1 Year FT / 2 Years PT
Dual accreditation (if applicable)	
Date of production/revision of this specification	16/12/2016

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

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

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

2.1 Educational aims and objectives

The aims of the award are to:

- Encourage the development of professional, innovative and current outcomes in a supportive environment.
- Engage in academic activities and negotiated projects, as simulations or live client projects, underpinned by personalised learning.
- Promote engagement with employers to support the development of professional skills relevant to employment within the computing and IT sector.

This award has been designed to provide the learning opportunities required for those who wish to become professional computing practitioners within the computing and IT sector with particular emphasis on Network Engineering. It does this through the curriculum content which is directly matched to the knowledge and skills which research in the sector has identified for being essential in network engineering for computing and IT practitioners.

The curriculum team manage a LinkedIn group with over 1450 members; more than 1000 of these are employers from the Computing and IT sector who are available to directly communicate with students on programme. Students are encouraged to communicate directly with these employers to gain work experience and or arrange trips/visits to employer premises to see networks and network engineering in practice. Additionally, each module aims to bring a subject specialist guest speaker to inform the curriculum. Employers are asked to review assignment briefs and where appropriate act as a Live Client or approve a simulated scenario which reflects realistic practice. Where employers act as a 'live client', they are invited to observe assessment and provide feedback however they do not influence the marks awarded for academic work. An example of this is where an Agile specialist from Sage Newcastle will deliver a talk in Project Management.

Through a range of teaching and learning activities, this programme seeks to engage the academic curiosity of learners, stimulate their intellectual capacities, and promote methodical, systematic and logical thinking within the digital industries, supporting the enhancement of employability/self-employment skills. The curriculum reflects contemporary issues supporting personal and professional development. While students obtaining the degree will be equipped to make a full contribution to the digital and technological sector, the level 6 studies they undertake have also been designed to encourage progression to postgraduate level study, and to provide an academic bridge allowing fluent transfer from level 6 to level 7 studies.

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)

BSc. (Hons) Computing with Networking will sit alongside BSc. (Hons) Business Computing within the school of Tourism, Digital and Creative Industries.

The Computing and IT curriculum area currently offer a range of study programmes from level 2 to level 3: BTEC Level 3 in IT has four choices of pathway including

generic IT, IT (Business), IT (Networks and System Support) and IT Software Development).

Students have the opportunity to progress to HE provision which includes: FdSc, Applied Business Computing, FdSc. Computing with Networking, FdSc. Cyber Security (*from September 2017) and FdSc. Software Development.

BSc. (Hons) Computing with Networking will share a course structure with BSc. (Hons) Business Computing in terms of module themes, delivery dates, and module weighting. 2 x module aims and learning outcomes will be broadly similar with the contextualisation of learner outcomes befitting the nature of the chosen course. Each programme however is distinctly different in terms of content such that learners with a desire to work in network engineering will choose the BSc. (Hons) Computing with Networking programme and learners with a desire to work in Business Analysis, Systems Analysis, IT Consultancy, Web Development or similar will choose the BSc. (Hons) Business Computing programme.

There is scope for learners from both BSc. (Hons) Computing with Networking and BSc. (Hons) Business Computing to work collaboratively, engage in critical debate and share in seminar based learning activities to support the skills required for Research, Project Management and further progression into employment, self-employment or further study.

Students who do not achieve 120 credits but do achieve at least 60 credits (not including Research Methods), will be eligible for an Exit Award ‘BSc Cyber Security (Top up)’.

3. Programme outcomes

Intended learning outcomes are listed below.

3A. Knowledge and understanding	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
A1: Articulate the purpose of research and explain theories and methods. Articulate the principles of module theory. A2: Evaluate the purpose and products of research. Evaluate the principles of project management. A3: Identify some of the challenges associated with digital security and using ethical hacking as an investigation tool. A4: Demonstrate a systematic understanding of the types of security confidentiality, authentication; non-repudiation; service integrity) and security big picture (network security; host OS security; physical security) A5 : Demonstrate an understanding of synchronisation concepts, techniques and principles A6: Explain, and perform/troubleshoot, configurations for switching and routing, including VLANs, inter-VLAN routing, distance vector and link state routing protocols, WAN, security and VPNs A7: Develop advanced switch and router configurations	A1: Research Methods Learners will gain a systematic understanding of a range of research methods which they will be able to demonstrate through the production of a research proposal which incorporates evidence of consideration of a range of research methods, consideration of any need for ethics approval and a rationale for their research proposal. Learning and teaching strategies will include lectures to introduce theories and methods and seminars which will look at a range of potential research methods and explore appropriate strategies to gain desired outcomes. Some group work will take place to encourage collaborative learning and formative assessment will aim to reinforce learning and challenge potential misunderstanding. A1: Project Management Learners will gain a systematic understanding of the principles of project planning which they will be able to demonstrate through the production of a project proposal which incorporates evidence of consideration of an appropriate methodology for initiating their project proposal.

3A. Knowledge and understanding	
A8: Demonstrate knowledge of WAN devices and Technologies, security and VPN design	Learning and teaching strategies will include lectures to introduce the principles of project management and seminars to discuss with learners the application of these principles to their project. Learners will engage in group work in which they will research the principles of project management and be formatively assessed throughout the first half of the semester. This will be in the form of informal presentations formatively assessed by peers and the tutor. A1: Ethical Hacking Learners will gain a systematic understanding of the fundamental concepts and underpinning principles of organisational security which they will be able to demonstrate through the production of a report. The learning and teaching strategy will include lectures, case studies, individual and group work, peer assessment, independent research and directed study into the threats, preventative methods and considerations that organisations face. Learners will undertake flipped learning where they will be given case studies to investigate and evaluate prior to module seminars. Formative feedback will be given throughout on small group presentations and case study evaluations prior to the final summative assessment. A2: Research Methods Learners will demonstrate an in-depth knowledge and understanding of the purpose and products/outcomes of research which will be evident in their research proposal.

3A. Knowledge and understanding	
	Learning and teaching strategies will involve independent research using recommended reading and seminars will group discussions. Formative assessment and feedback will ensure appropriate understanding. Individual summative assessment will include marks for an evaluation of the purpose and products of research. A2: Project Management Learners will demonstrate an in-depth knowledge and understanding of the purpose and products/outcomes of project management which will be evident in their reflective evaluation. Learners will engage in a range of teaching and learning strategies including flipped learning which require them to access work from an online learner management system, complete a task and be prepared at the start of a lecture, seminar or workshop. Learners will acquire the knowledge of the principles of project management in class lecturers and seminars. Group and individual research tasks will be formatively assessed and will provide the knowledge and skills needed to evaluate the principles of project management. The learners will be summatively assessed towards the end of the semester by way of a formal presentation to the module tutor. A3: Research Methods Learners will be introduced to quantitative and qualitative data analysis tools and techniques and will gain systematic understanding to the extent they are able to interpret and evaluate research based findings which will be evident in their Research project.

3A. Knowledge and understanding	
	Teaching and Learning strategies will include an introduction to appropriate analysis tools and techniques and tutorials will be facilitated to develop learners' skills and competence in the use of statistical analysis software. Example data will be used to practice analysis techniques and formative assessment will be used to provide learners with feedback on their skills and competence and appropriate guidance for improvement. Learners will engage in a range of teaching and learning strategies including flipped learning which require them to access work from an online learner management system, complete a task and be prepared at the start of a lecture, seminar or workshop. A3: Ethical Hacking Learners will demonstrate confidence and flexibility in identifying a range of challenges that are associated with digital security and the application of ethical hacking which will be evident in their summatively assessed presentation. The learning and teaching strategy will include case studies and scenario based learning experiences. Independent research and flipped learning will be used alongside a virtual learning environment where learners will share ideas and concepts. Formative assessment will be done throughout the module to assess learning with an individual presentation used to facilitate formative assessment and related feedback. A4: Ethical Hacking Learners will demonstrate a systematic knowledge and understanding of the types of security confidentiality, authentication; non-repudiation;

3A. Knowledge and understanding	
	service integrity) and security big picture (network security; host OS security; physical security). Employer links have been established with SRM (Security Risk Management) Solutions who will be able to provide guest speakers specifically for ethical hacking but also for cyber security concepts in general. Formative assessment will be done through discussion, questioning and peer evaluation of presentations A6: Routing and Switching Learners will be gain an in-depth knowledge and understanding of the configuration and troubleshooting of switching and routing, which they will able to demonstrate through the evidence provided in the formative exams during the course and the summative exam assessment which will occur at the end of the module. A7: Network Management Learners will gain the ability to develop advanced switch and routing configurations, through formative group and individual practical skills tasks, which they will be able to demonstrate in their Network Management Report based on an existing topology that requires modification to accommodate additional requirements. A7: Routing and Switching Learners will gain the ability to develop advanced switch and routing configurations, through formative group and individual practical skills tasks, which they will be able to demonstrate in their Project Report

3A. Knowledge and understanding	
	based on an existing topology that requires modification to accommodate additional requirements. A8: Network Management Learners will be able to demonstrate their ability to incorporate security and VPNs into an existing topology, the evidence of which will appear in their Network Management Exam and Network Management Report. Learners will engage in a range of teaching and learning strategies including flipped learning which require them to access work from an online learner management system, complete a task and be prepared at the start of a lecture, seminar or workshop. A8: Routing and Switching Learners will be able to demonstrate their ability to incorporate security and VPNs into an existing topology, the evidence of which will appear in their Project Report. Learners will engage in a range of teaching and learning strategies including flipped learning which require them to access work from an online learner management system, complete a task and be prepared at the start of a lecture, seminar or workshop. A8: Computing Project Learners will carry out research into a problem which they have defined. They will build on the knowledge, understanding and skills developed to date to apply advanced principles and techniques in the development of their proposed solution. Learners will draw on a range of sources including technical papers, books, manufacturers' literature and the internet to investigate their

3A. Knowledge and understanding	
	chosen topic. Throughout the project they will be set tasks through tutor marked assignments which will help them plan and progress the various stages of the project.

3B. Cognitive skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
B1: Conduct a literature review. B2: Applies analytical and critical thinking skills to Technology Solutions development and to systematically analyse and apply structured problem solving techniques to complex systems and situations. B3: Demonstrate confidence and flexibility in identifying and defining complex problems. B4: Define the role of fault, configuration, accounting, performance and security management in relation to network management.	B1: Research Methods Learners will develop the skills required to conduct a literature review applying knowledge in unfamiliar contexts, they will then write a critical literature review which will be formatively assessed and will evident is their Research project. Learners will be introduced to a range of techniques used to conduct a literature review. Case studies will be used as a focus and learners will work in pairs (or small groups) and receive peer and tutor feedback. Formative assessment will be provided in workshops and individual work will be summatively assessed. B1: Routing and Switching Learners will develop the skills required to conduct a critical review of their initial network design, they will then write a critical review which will be formatively assessed and will be evident in their Project Report.

3B. Cognitive skills	
	B2: Research Methods Learners will be introduced to range of tools and techniques to analyse research findings. This will lead to the need to interpret and analyse both quantitative and qualitative data effectively. Learners will demonstrate effective analytical skills in judging the reliability, validity and significance of evidence to support their conclusions and/or recommendations. Teaching and Learning strategies will include an introduction to appropriate analysis tools and techniques and tutorials will be facilitated to develop learners' skills and competence. Example data will be used to practice analysis techniques and formative assessment will be used to provide learners with feedback on their skills and competence and appropriate guidance for improvement. Evidence of effective analysis will be summatively assessed in the Research project. B2: Network Management Learners will be introduced to a range of complex theories and concepts and will need to apply analytical and critical thinking skills to Technology Solutions development and to systematically analyse and apply structured problem solving techniques to complex systems and situations. The application and critical thinking skills will be formatively assessed using exams containing sample problems throughout the module, and the summative assessments will be carried out using the Network Management exam and Network Management Report. B2: Computing Project

3B. Cognitive skills	
	Learners will be employ a range of tools and techniques to analyse technology based solutions and apply structured problem solving techniques to produce their proposed artefact. In the three few weeks there will be group delivery to ensure all learners have a clear understanding of the module outcomes and are able to produce a clearly defined project proposal. Learners will be allocated a project supervisor who will provide 1-2-1 academic tutorials throughout the semester to offer guidance and support throughout systems development of the artefact and reflective evaluation. B3: Project Management Learners will be introduced to the principles of project management and a range of methodologies. They will work in small groups to consider and agree their project and follow a systematic methodology to initiate, plan, execute, control and complete their project. Learners will have the opportunity to gain formative feedback throughout the project management cycle by way of academic tutorials and will keep an individual log to record their contribution to the project throughout the year; this will provide evidence for their reflective evaluation. Lectures and seminars will provide the theoretical knowledge to allow the learners to identify and define complex problems within their own project. Within their small groups throughout the year, learners will be given formative feedback on presentations in which they aim to demonstrate their knowledge on the principles and methodologies of project management. Academic tutorials will be available for learners in which

3B. Cognitive skills	
	they can discuss and receive formative feedback on the specifics of their project. Flipped learning will require learners to access work/resources from an online learner management system, complete a task and be prepared at the start of a lecture, seminar or workshop. Learners will be summatively assessed on their ability to identify and define a complex problem within their first assignment. Here they will research, evaluate and justify a solution to an identified problem. B3: Network Management Learners will be introduced to the fundamental principles of network management. They will gain experience and confidence in defining, planning and applying network infrastructures to specified requirements, and implement and configure the devices necessary to maintain the infrastructure environment. Learners will have the opportunity to gain formative feedback throughout the module and will develop confidence in making appropriate recommendations. Learners will demonstrate confidence and flexibility in identifying and defining the five key activities associated with network management. The supplied sample networks will contain features that fully test the learner's ability to demonstrate their skills in each key activity. These abilities will be formatively assessed using exams containing sample problems throughout the module, and the summative assessments will be carried out using the Network Management exam and Network Management Report.

3B. Cognitive skills	
	B3: Ethical Hacking Learners will be introduced to the fundamental principles of organisational security and a range of methodologies, tools and techniques for penetration testing. They will consider a range of potential threats and identify ethical issues in the exploitation of technologies and work within professional, ethical and legal constraints. Learners will have the opportunity to gain formative feedback throughout the module and will develop confidence in making appropriate recommendations. B4: Network Management Learners will demonstrate an in-depth knowledge and understanding of the underlying purpose, requirements and stages associated with the five key activities associated with network management which will be formatively assessed using exams containing sample problems throughout the module, and the summative assessments will be carried out using the Network Management exam and Network Management Report.

3C. Practical and professional skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
C1: Conduct reflective evaluation C2: Work independently to a professional standard C3: Develop a security case against recognised security threats and recommend mitigation, security controls and appropriate processes. C4: Plan, design and document a computer network, given the basic parameter requirements. C5: Undertake analysis and design to create artefacts such as use cases to produce robust software designs.	C1: Research Methods Learners will develop skills in self-reflection which informs their ability to seek and apply new techniques to their own performance and identify how these might be evaluated. Throughout the semester, learners will be encouraged to reflect on their own learning and they will have opportunities to receive formative feedback through group and 1-2-1 academic tutorials. Learners will include a reflective evaluation in their Research project which is summatively assessed. C1: Project Management Learners will develop skills in self-reflection which informs their ability to seek and apply new techniques to their own performance and identify how these might be evaluated. Learners will produce a reflective evaluation which they will present at the end of the module. This reflective evaluation will be summatively assessed. Learners will carry out formative assessments by way of presentations from the start of the module. This will provide learners will the practical and professional skills needed to conduct a reflective evaluation on their project. They will also have opportunities to receive formative feedback through group and 1-2-1 academic tutorials Learners will be summatively assessed by way of a formal individual presentation at the end of the module in which they critically evaluate their own performance against the agreed project plan.

3C. Practical and professional skills	
	Learners will need to employ time management skills in order to ensure they complete work for each of the modules they are learning and meet deadlines set while in many cases juggling a range of personal responsibilities alongside their studies. This will be summatively assessed within the formal presentation (Assignment 2). A presentation in which learners critically evaluate their performance against the project plan will be summatively assessed for LO4 at the end of the module. The presentation will be submitted at the same time as the project plan (LO2, LO3) but presented shortly after. C1: Computing Project Learners will apply skills in self-reflection which informs their ability to seek and apply new techniques to their own performance and identify how these might be improved. Learners will submit a reflective evaluation for formal assessment. C2: Research Methods Learners will work independently to a produce work to a professional standard in the teaching and learning environment, in the self-study and in the research activities they perform. There will be opportunities to receive formative assessment throughout the teaching and learning and this will be summatively assessed in the research proposal and the Research project. C2: Network Management Learners will work independently to a produce work to a professional standard in the self-study and research activities they perform. There will

3C. Practical and professional skills	
	be opportunities to receive formative assessment throughout the teaching and learning and this will be assessed in the Network Management Report. Learners will need to employ time management skills in order to ensure they complete work for each of the modules they are learning and meet deadlines set while in many cases juggling a range of personal responsibilities alongside their studies. C2: Ethical Hacking Learners will work independently to a produce work to a professional standard in the teaching and learning environment, in the self-study and in the research activities they perform. There will be opportunities to receive formative assessment throughout the teaching and learning within this module. The teaching and learning strategy will include producing critical reviews and learners will be introduced to techniques and methods used to conduct them. Learners will be given feedback on the structure and presentation of their work to ensure that professional standards are developed. C2: Routing and Switching Learners will work independently to a produce work to a professional standard in the self-study and research activities they perform. There will be opportunities to receive formative assessment throughout the teaching and learning and this will be assessed in the Project Report. C2: Computing Project

3C. Practical and professional skills	
	Learners will work independently to a produce work to a professional standard in the teaching and learning environment, in the self-study and in the independent learning they engage in. There will be opportunities to receive formative assessment throughout the teaching and learning in 1-2-1 academic tutorials with their allocated project supervisor throughout the development of the project. C3: Ethical Hacking Learners will be introduced to recognise security threats and be able to develop a security case against them, recommend mitigation, security controls and appropriate processes. Employer links have been established with SRM (Security Risk Management) Solutions who will be able to provide guest speakers specifically for ethical hacking but also for cyber security concepts in general. Formative feedback will take place through questioning and discussion with peers about their findings. C4: Routing and Switching Learners will gain the necessary skills to be able to plan, design build and test a modification to an existing network, and provide evidence of their planning and documentation, including the devices/cabling used and the IP subnets employed, and this will be assessed in the research proposal and the Project Report. C5: Computing Project

3C. Practical and professional skills	
	In developing the artefact, learners will follow a systems development methodology to carry out appropriate analysis of the problem and design and create a suitable artefact which meets solution criteria.

3D. Key/transferable skills	
Learning outcomes:	**Learning and teaching strategy/ assessment methods**
D1: Able to conduct effective research, using literature and other media, into IT and business related topics. D2: Employ effective time management skills D3: Demonstrate a professional standard of fluency in written communications and an ability to articulate complex issues.	D1: Research Methods Learners will develop effective research skills such that they are able to identify an appropriate research subject and carry out and appropriate research activity leading to outcomes that inform. Teaching and learning strategies will include the employment of a range of examples of research into different topics and discussions about the strategies used. Learners will be tasked to read case studies independently and draw conclusions which they will bring to seminars and discuss with peers. Peer assessment will be sued to encourage debate and formative assessment will be provided. Individual research will be evident in the Research project which will be summatively assessed. D1: Network Management Learners will develop effective research skills so that they can identify an appropriate research subject and carry out and appropriate research

3D. Key/transferable skills	
	activity leading to outcomes that inform. This will be evident in the Network Management Report. D1: Ethical Hacking Learners will apply effective research skills to identify emerging technologies and the identification of some of the challenges associated with digital security and the application of ethical hacking. D1: Learners will develop effective research skills so that they can identify an appropriate research subject and carry out and appropriate research activity leading to outcomes that inform. This will be evident in the Project Report. D1: Computing Project Learners will develop effective research skills such that they are able to identify an appropriate problem and carry out appropriate research activity and independent learning to apply an appropriate solution. D2: Research Methods Learners will engage in a range of teaching and learning strategies including flipped learning which require them to access work from an online learner management system, complete a task and be prepared at the start of a lecture, seminar or workshop. Learners will need to employ time management skills in order to ensure they complete work for each of the modules they are learning and meet deadlines set while in many cases juggling a range of personal responsibilities alongside their studies. Both the research proposal and the Research project will need to be submitted to a deadline in order to avoid assessment penalties.

3D. Key/transferable skills	
	D2: Project Management Learners will engage in a range of teaching and learning strategies including flipped learning which require them to access work from an online learner management system, complete a task and be prepared at the start of a lecture, seminar or workshop. Learners will need to employ time management skills in order to ensure they complete work for each of the modules they are learning and meet deadlines set while in many cases juggling a range of personal responsibilities alongside their studies. Learners will work in groups and must ensure they meet agreed deadlines to ensure their contributions compliment the work of their peers and do not cause unnecessary delays. Lectures and Seminars will provide the knowledge on the principles of project management including the use of Microsoft Project to enable learners to effectively manage their time. Group academic tutorials will be available to enable learners to gain formative feedback on their time management. Clear deadlines and milestones will be set by the learner within their groups and will be discussed at the academic tutorials. Learners will have their time management skills summatively assessed by way of a written report which covers LO1, LO2 and LO3. This includes key documents which will cover the time management of the project. A presentation in which learners critically evaluate their performance against the project plan will be summatively assessed for

3D. Key/transferable skills	
	LO4 at the end of the module. The presentation will be submitted at the same time as the project plan (LO2, LO3) but presented shortly after. D2: Network Management Learners will engage in a range of teaching and learning strategies including flipped learning which require them to access work from an online learner management system, complete a task and be prepared at the start of a lecture, seminar or workshop. Learners will need to employ time management skills in order to ensure they complete work for each of the modules they are learning and meet deadlines set while in many cases juggling a range of personal responsibilities alongside their studies. The Network Management Report will need to be submitted to a deadline. D2: Ethical Hacking Learners will engage in a range of teaching and learning strategies including flipped learning which require them to access work from an online learner management system, complete a task and be prepared at the start of a lecture, seminar or workshop. The teaching and learning strategy for this will involve discussion and learners will be expected to contribute to discussions based on recent developments. Learners will need to employ time management skills in order to ensure they complete work for each of the modules they are learning and meet deadlines set while in many cases juggling a range of personal responsibilities alongside their studies. Teaching and learning strategies will include assessments with deadlines that learners will have to adhere to and group tasks that require work to be completed by deadlines.

3D. Key/transferable skills	
	Learners will need to self-manage their time and workloads to meet this. Formative feedback leading to assessment will be done through questioning, peer reviews and presentations. D2: Routing and Switching Learners will engage in a range of teaching and learning strategies including flipped learning which require them to access work from an online learner management system, complete a task and be prepared at the start of a lecture, seminar or workshop. Learners will need to employ time management skills in order to ensure they complete work for each of the modules they are learning and meet deadlines set while in many cases juggling a range of personal responsibilities alongside their studies. The Project Report will need to be submitted to a deadline. D2: Computing Project Learners will need to employ time management skills in order to ensure they complete work at agreed stages throughout the project and are able to evaluate their progress and performance at key stages with their project supervisor. D3: Research Methods Learners will prepare written documentation throughout the module in a range of formats including presentations, essays and reports. Learners will prepare such documents to a specified format and structure and apply Harvard referencing. An in-class marking sheet and rubric will be used to encourage self and peer assessment and formative assessment will be provided to help

3D. Key/transferable skills	
	develop learners' skills and competence to a professional standard. Similar grading criteria will be used in the summative assessment for both the research proposal and the research project written reports which will be summatively assessed. D3: Project Management Learners will prepare written documentation throughout the module in a range of formats including reports, logs, project plans and presentations. Learners will prepare such documents to a specified format and structure and apply Harvard referencing wherever appropriate. Learners will carry out a range of different formatively assessed pieces of group work during the early stages of the module. Group presentations will be used to enable learners to develop their professional communication skills and will be formatively assessed by the module tutor and their peers. LO4 will be summatively assessed by way of a formal individual presentation. D3: Network Management Learners will demonstrate their written communication skills through the Network Management Report. Learners will prepare this documents to a specified format and structure and apply Harvard referencing. D3: Ethical Hacking Learners will prepare written documentation throughout the module in a range of formats including presentations, essays and reports. Learners will prepare such documents to a specified format and structure and apply Harvard referencing.

3D. Key/transferable skills	
	D3: Routing and Switching Learners will demonstrate their written communication skills through the Project Report. Learners will prepare this document to a specified format and structure and apply Harvard referencing. D3: Learners will prepare written documentation throughout the module in a range of formats including a weekly log of progress which will be recorded on the learning management system; regular updating and monitoring of the project plan; and preparation for academic tutorials with the project supervisor.

4. Programme Structure

Programme Structure - LEVEL 3			
Compulsory modules	**Credit points**	**Optional modules**	**Credit points**
Research Methods Project Management Network Management Computing Project Ethical Hacking Routing and Switching	20 20 20 20 20 20	No Optional Modules	

BSc. (Hons) Computing with Networking - September Starts

	Full Time	Part Time
Semester 1	Research Methods	Research Methods
	Routing & Switching	Routing & Switching
	Project Management	
Semester 2	Full Time	Part Time
	Network Management	Network Management
	Ethical Hacking	
	Computing Project	
Semester 1	Full Time	Part Time
	Research Methods	Project Management
	Routing & Switching	
	Project Management	
Semester 2	Full Time	Part Time
	Network Management	Ethical Hacking
	Ethical Hacking	Computing Project
	Computing Project	

BSc. (Hons) Computing with Networking - January Starts

	Full Time	Part Time
Semester 1	Network Management	Network Management
	Ethical Hacking	Ethical Hacking
	Computing Project	
Semester 2	Full Time	Part Time
	Research Methods	Research Methods
	Routing & Switching	
	Project Management	
Semester 1	Full Time	Part Time
	Network Management	Project Management
	Ethical Hacking	Computing Project
	Computing Project	
Semester 2	Full Time	Part Time
	Research Methods	Routing & Switching
	Routing & Switching	
	Project Management	

5. 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**

Learners progressing from New College Durham foundation degrees will have had an opportunity to engage in a significant work placement as part of their level 5 studies. Examples include learners who spend twelve weeks working in Europe for Computing and IT business organisations where they gain real work training and experience.

The programme will endeavour to provide the opportunity for learners to engage in, and gain credit for, the development of industry based work.

This programme is designed to meet the creative and intellectual needs of learners from diverse computing and IT disciplines, and as required by national and international sectors. Learners from varied specialisms and prior experience, including internal and external/UK and international learners, promote cross-collaboration.

This programme does not incorporate a professional placement year as it is a top-up programme. Wherever appropriate however, live clients are used and each module will include at least one visit from a guest speaker who specialises in the module subject.

Through collaboration with European HEIs, learners will have an opportunity to engage in a BusIT week whereupon they can travel to a European destination to work with students from a range of institutes to collaborate on a project and present their product. This provides learners with the opportunity to build their confidence and competence in working with new people to develop a product on a new concept, idea and/or with new emerging technology and then convince a panel that their product is the right solution. Such opportunities provide a personalised experience in a chosen discipline, to support further progression into employment, self-employment or further study.

6. Support for students and their learning

There are support mechanisms to provide both academic and pastoral support for students. Quantitative and qualitative evidence is used to gauge the effectiveness and increased utilisation of these services, evidenced particularly in the responses from student questionnaires, and ASC service learner feedback and evaluation processes. Additional learning support is available to students who have learning difficulties and/or disabilities.

Student Induction

All students joining the course will undertake an induction programme at their point of entry. The aims of the induction are:

- To provide students with full details of the BSc. Computing with Networking degree programme, including its aims and objectives, modules, skills associated with their studies, its assessment strategy, and its approach to learning;

- To induct students to the learning resources available to them whilst on the course, such as learning management system (student intranet and Schoology) and eLearning Centre
- To allow students the opportunity to identify issues which need to be resolved;
- To enable students to meet the tutors involved in delivering the programme;
- To meet and interact with fellow students;
- To introduce students to the code of conduct and regulations of the College;
- To make students aware of the relevant systems and structures available to support them, including the Advice, Support Careers Services (ASC), Personal Learning Coach, and the Student Union.

Overview of Support Arrangements

Support needs are addressed with learners on an individual basis during diagnostic activities taking place within induction. Those students who are new to the college, and not previously known to the course team, are encouraged to engage with additional support via Personal Learning Coach (PLC) and Academic Support Tutor to ensure fluid transition into level 6 study.

- **Internal Students (Progressing from FdSc Level 5)**

  Designated personal tutor and 1:1 tutorials.

  Optional Personal Learning Coach (PLC) Support / continued support for those previously using PLC's.

  Access to Academic Support Tutor.

- **International Students**

  Designated personal tutor and 1:1 tutorials.

  Support from International Office.

  Personal Learning Coach (PLC) Support encouraged

  Access to Academic Support Tutor encouraged.

- **External UK Students**

  Designated personal tutor and 1:1 tutorials.

  Personal Learning Coach (PLC) Support encouraged.

  Access to Academic Support Tutor encouraged.

Personal Tutor System

A comprehensive personal tutor system is in place to make sure that students have a direct personal contact with an individual member of the course team to discuss academic and personal matters relevant to their learning.

All students are allocated a personal tutor when first registering to the course. It is intended wherever possible a student will have the same personal tutor for the length of their course.

The personal tutor will be responsible for the induction programme to ensure students are comfortable with the course. At the induction the personal tutor will meet students to ascertain any particular learning or support needs and thereafter will meet with individual students on a regular basis to monitor progress and discuss any issues arising.

Academic Support

In addition to support from their personal tutor each student will receive academic support from their module tutors. Support is given to learners via tutorials at set intervals during the academic year and there is likely to be opportunity within some workshop sessions for additional support. Further support is available within critique-based activities where both tutor and peers are able to give constructive advice as to the progress and development of group assignment work.

Students have access to a dedicated academic support tutor. This post has been acknowledged by QAA assessors as being an invaluable resource enabling students who do not come from an academic background to achieve at a higher education level.

Pastoral Support

The College is committed to providing high quality, confidential and impartial information, and advice and guidance service. This is provided by the comprehensive Advice, Support Careers (ASC) Service. All students receive induction on the ASC service at the start of their course. The ASC service is designed to provide effective and timely information, advice and guidance on funding and welfare, career planning and provides access to confidential personal counselling support. The ASC service offers appointments and a 'drop-in' service. ASC information is also available to download from the College website, student intranet or from the dedicated ASC area within the eLearning Centre (eLC), foyer of the Neville Building and the Sports Block. The Learner Development Co-ordinator, based in the Students' Union, also helps with social and health related issues.

The PLC service does not have any specific criteria for referral, and any student who may benefit from such support can access the service. Students can be referred by their tutor, lecturer, and external advisor, such as ASC or Connexions or by themselves. This personalised referral system helps in identifying new students as well as continuing communication with progressing students. There is a dedicated page on the College internet and intranet. The service is also advertised via the College television system, allowing students in communal areas of college to become aware of the provision.

Career Guidance

Students have access to a comprehensive range of relevant, up to date resources on learning and work via online ASC services and also as hard copy which is available at the ASC facility. The ASC staff also provide on-programme support via class-based

sessions on Careers Education, including careers management and finding employment both in the UK and abroad. Prospective and actual students are provided with detailed access to careers and funding services for general enquires.

Support with Coursework

Students are supported in their preparation for assessments by their module tutor and where relevant other academic staff within the curriculum team. Students have access to additional academic support particular to assessment tasks from an independent Academic Support Tutor. The tutor offers specific study skills advice and guidance, on for example, Academic Writing, Assignment/Essay Planning and Structuring, The Harvard System (for references & bibliographies), Open Athens & Online Information Retrieval, Literature Searching, Presentation Skills, Reading Efficiently, Report Writing, Revision and Examination Skills. Electronic advice and guidance booklets are available on the student intranet to download.

In order to protect students against unfair competition, the college may need to ensure that the students are not submitting assessments which have been copied or plagiarised or which are not substantially the student's own work. The College uses the software Turnitin to enable staff and students to check work for originality. Students can upload their assignments prior to submission for marking and get a report confirming their references. This can be extremely effective in ensuring against plagiarism and providing a student and staff member with the confidence that the work is original.

Module specific material is provided on Schoology; this information is reviewed and updated annually to coincide with the nature and specific requirements of assignments being delivered in a given year. Documents include planners, programme handbook, module handbooks, PowerPoint presentations, and assignment briefs.

Self-directed study is an important aspect within the programme to provide students the opportunity to develop their assignments when resources are not available outside of the college campus. Students will have access computer rooms, specialist software, and printing facilities. This is to enable learners to build on their practical skills independently to support the level individualised learning expected at level 6.

7. Criteria for admission

The College admissions policy is to encourage access to higher education through an equal opportunity regardless of race, gender, disability, sexual orientation, religious belief or age.

To gain entry to the programme a student must satisfy the standard or non-standard entry requirements to the course. Candidates with non-standard entry applications will be considered on the basis of relevant work experience and attainment of skills, which demonstrate an ability to study at this level. Given the potential wide range of experience of potential applicants to this programme, applications for Accreditation of Prior Learning (APL) and Accreditation of Experiential Learning (APEL) are welcomed in accordance with Academic Regulations. However, these must be discussed as part of the admissions process as once a student is registered to a programme APL/APEL may not be considered for approval.

Standard Entry criteria

- Applicants should be working towards, or have attained, a level 5 qualification (HND / FdSc. / international equivalent 120 ECTS Credits) in a related discipline.
- All applicants must be interviewed by the curriculum team (international applicants via internet (e.g. Skype).
- To have or be working towards Level 2 or equivalent in maths and English Language (or a minimum 5.5 IELTS in each band for international applicants).

Non-standard entry criteria:

- Evidence of appropriate computing and IT experience or employment within the Computing and IT sector.
- All applicants must be interviewed by the curriculum team (international applicants via internet (e.g. Skype).
- To have or be working towards Level 2 or equivalent in maths and English Language (or a minimum 5.5 IELTS in each band for international applicants).
- Attend a HE Pre-induction day to assess suitability.

Admissions Process

Once an application has been received it is recorded and acknowledged by the college admissions team. The course team then views the application.

The process for interview is as follows:

- Applications welcomed through UCAS and NCD Application Form.
- All applicants are interviewed by the curriculum team (international applicants via internet (e.g. Skype).
- Acceptance or rejection via UCAS and NCD application process after interview.

Entry to the course is at the discretion of the course team and based upon the combination of successful interview and achievement of 240 credits from previous relevant study that illustrates an ability to meet level 6 course learning outcomes.

http://www.newcollegedurham.ac.uk/apply/apply-online/

8. Language of study

The programme is conducted using English language.

9. Information about assessment regulations

Regulations for validated awards of the Open University delivered at New College Durham (Approved December 2016)

10. Methods for evaluating and improving the quality and standards of teaching and learning.
Rigorous and robust monitoring of Quality and Performance is embedded across the School. Quality Reviews take place at systematic intervals throughout the year at programme level and at area level. These reviews are led by the Quality Department which identify potential performance issues at an early stage. The Head of School has four Performance Management meetings throughout the year to monitor quality and performance across all areas of the School. IT was not subject to external Peer Observations last year however the Curriculum Manager carried out learning walks across a range of staff covering themes such as maths and English, employability, stretch and challenge and personalised learning. The Head of School also carried out non-graded observations on staff within the School which helps identify any support needs and issues relating to underperformance. None were identified in the Computing & IT Curriculum area and the student performance and feedback strongly indicate excellence in teaching and learning. All curriculum staff engage in staff development activities at least three times a year and are responsible for managing an individual Teaching Learning and Assessment Development Plan to identify areas for improvement and strategies to share best practice. The TLA team within the college are available to support curriculum staff in their development and deliver twilight development and/or bespoke sessions to curriculum areas upon request.

Annexe 1: Curriculum map

Annexe 2: 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.

Level	Study module/unit	Programme 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
3	Research Methods	✓	✓	✓						✓	✓							✓	✓							✓	✓	✓				
	Project Management	✓	✓									✓						✓									✓	✓				
	Network Management							✓	✓		✓	✓	✓						✓							✓	✓	✓				
	Computing Project								✓		✓	✓						✓	✓			✓				✓	✓	✓				
	Ethical Hacking	✓		✓	✓							✓							✓	✓						✓	✓	✓				
	Routing and Switching						✓	✓	✓	✓									✓		✓					✓	✓	✓				

Annexe 2: Notes on completing programme specification templates

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

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

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

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

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

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

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


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