



**Institute for Apprenticeships  
& Technical Education**

**Higher technical qualification submission form**

**Awarding body information**

## **Awarding body information**

**What is the name of the awarding body?**

NCG

**Is the awarding body a higher education provider?**

Yes

**Is the awarding body on the Office for Students register?**

Yes

## **Qualification information**

### **Qualification information**

You can only submit one qualification for each form. If you are submitting multiple qualifications you must start a new form for each qualification. Please include the name of the qualification as it appears on Ofqual register or UCAS. Include the size of the qualification. e.g. award, certificate, diploma

**What is the name of the qualification?**

FdSc Networking and Cyber Security

**Is the qualification on the Ofqual register?**

No

If the qualification is not regulated by Ofqual, the organisation owning the qualification must be OfS regulated. This is typically the case of qualifications from Higher Education Providers. For organisations which are Ofqual regulated, the specific qualification must be on the Ofqual register for the application to be progressed. The form will not prevent continuing if this is not completed, but your application cannot be progressed by the approval managers following submission if the awarding organisation is regulated by Ofqual but the qualification is not.

**What is the level of the qualification?**

Level 5

## **Route and occupational standards**

### **Route and occupational standards**

Awarding bodies must demonstrate that a qualification will enable a person to demonstrate that they have attained as many of the knowledge, skills and behaviours set out in the standard as may be reasonably

expected by undertaking a course of education.

Please note:

- Qualifications will only be considered for approval against occupational standards approved by the Institute.

If qualifications have optional units or pathways, we will only approve qualifications where every possible combination of units/ pathways ensures that a learner achieves competence in at least one occupation for which there is a standard. Qualifications with optional units that do not ensure this should be redesigned or remove optional units that do not align to occupations.

Awarding bodies must fill out all sections of this form. They must also submit supporting documentation to provide evidence of the following:

- The content of the qualification (for example, the specification of content)
- Evidence of employer engagement in the development and validation of the qualification (for example this could be within the qualification design and validation documentation that was used through the development of the qualification which evidences where and how employers were involved)

#### **Which route does the qualification fall under?**

Digital

#### **Which occupational standards are aligned to the qualification?**

Cyber-security technologist/Level: 4

Network engineer/Level: 4

#### **Attach documents**

**Please attach the following documents:**

- The content of the qualification (for example, the specification of content)
- Evidence of employer engagement in the development and validation of the qualification (for example this could be within the qualification design and validation documentation that was used through the development of the qualification which evidences where and how employers were involved)

## Cyber-security technologist

## Cyber-security technologist

# Knowledge, skills and behaviours coverage within the qualification

Please identify which knowledge, skill and behaviour statements from the occupational standard are covered within the qualification.

Where knowledge, skill and behaviour statements are covered, please provide a reference to the qualification content. This should be a unit or module reference along with associated page/paragraph/line numbers (as appropriate) in the attached specification. Please be as specific as possible which content in the qualification aligns to the statement in the standard.

Where knowledge, skill or behaviour statements are partially covered or not covered, you will be asked to provide a rationale for the exclusion of this content from the qualification. The employer engagement evidence provided should support this rationale.

The following questions assess how knowledge, skill and behaviour statements from the occupational standards are covered within the qualification.

**This page has automatically generated an item for each knowledge, skill and behaviour statement (KSB) contained within the chosen standard. So please do not remove or add any further KSBs, as it requires the exact number.**

## KSBgenerator

### KSB

#### KSB 1

**K1 Principles of networks: OSI and TCP/IP models, data, protocols and how they relate to each other; the main routing protocols; the main factors affecting network performance including typical failure modes in protocols and approaches to error control; virtual networking.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS101- Page 24, Section 10 - Indicative content - Taught in Class

Document 07. NCS102 - Page 28 - Section 10- Indicative content - Taught In Class

#### KSB 2

**K2 The concepts, main functions and features of at least three Operating Systems (OS) and their security functions and associated security features.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - Page 67- Section 10 - Indicative content - OS Security Function and Associated features - Taught

Document 07. NCS201 - Page 53 - Section 10 - Indicative content - Concepts and Main functions of at least three operating systems

### **KSB 3**

**K3 Cyber security concepts and why cyber security matters to business and society; Security assurance concepts and how assurance may be achieved in practice including penetration testing and extrinsic assurance methods.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Security concepts, Why it matters, Security assurance and how it can be achieved in practice, pen testing and extrinsic assurance methods - Taught in class

### **KSB 4**

**K4 The main types of common attack techniques; also the role of human behaviour, including the significance of the 'insider threat'. Including: - how attack techniques combine with motive and opportunity to become a threat. - techniques and strategies to defend against attack techniques and mitigate hazards.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

### **KSB 5**

**K5 The significance of identified trends in cyber security threats and understand the value and risk of this analysis. How to deal with emerging attack techniques (including 'zero day'), hazards and vulnerabilities relevant to the digital systems and business environment.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

### **KSB 6**

**K6 Lifecycle and service management practices to an established standard to a foundation level for example Information Technology Infrastructure Library (ITIL) foundation level.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module with previous industry project

Document 07. NCS101- Page 24, Section 10 - Indicative content - Taught in Class

## **KSB 7**

**K7 Cyber incident response processes, incident management processes and evidence collection/preservation requirements to support incident investigation.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS104- Page 38, Section 10 - Indicative content - Taught in Class

## **KSB 8**

**K8 Understands the main features, applicability and how to apply the significant law, regulations and standards relevant specifically to cyber security. To include: laws, regulations & standards relating to personal data and privacy (e.g. Data Protection Act 2018 implementing General Data Protection Regulation); use of digital systems (e.g. Computer Misuse Act 1990 ); regulatory standards for cyber security, intelligence collection and law enforcement (e.g. Intelligence Services Act 1994, Regulation of Investigatory Powers Act 2000; standards for good practice in cyber security (e.g. ISO 27001, CyberEssentials, NIST) and any updates or additions.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS104- Page 38, Section 10 - Indicative content - Taught in Class

## **KSB 9**

**K9 Ethical principles and codes good practice of at least one significant cyber security professional body and the ethical responsibilities of a cyber security professional.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS104- Page 38, Section 10 - Indicative content - Taught in class

## **KSB 10**

**K10 How to analyse employer or customer requirements to derive security objectives and taking account of the threats and overall context develop a security case which sets out the proposed security measures in the context with reasoned justification.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WRL100 - Page 18, Section 10 - Indicative content - Throughout the year long module with previous industry project

Document 07. NCS201 - Page 53 - Section 10 - Indicative content - Taught in Class

## **KSB 11**

**K11 Horizon scanning including use of recognised sources of threat intelligence and vulnerabilities.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

## **KSB 12**

**K12 Common security architectures and methodologies; be aware of reputable security architectures that incorporates hardware and software components, and sources of architecture patterns and guidance. How cyber security technology components are typically deployed in digital systems to provide security functionality including: hardware and software to implement security controls.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS202 - page 58 - Section 10 Indicative content - Taught in Class

## **KSB 13**

**K13 The basic terminology and concepts of cryptography; common cryptography techniques in use; the importance of effective key management and the main techniques used; legal, regulatory and export issues specific to use of cryptography.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS103 - page 33 - Section 10 Indicative content - Taught in Class through creation of a programme that encrypts data

Document 07. NCS202 - page 58 - Section 10 Indicative content - Taught in Class

## **KSB 14**

**K14 Risk assessment and audit methodologies and approaches to risk treatment; approaches to identifying the vulnerabilities in organisations and security management systems; the threat intelligence lifecycle; the role of the risk owner in contrast with other stakeholders.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module with previous industry project

## **KSB 15**

**K15 Principles of security management systems, including governance, organisational structure, roles, policies, standards, guidelines and how these all work together to deliver the identified security outcomes.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module with previous industry project

Document 07. NCS201 - Page 53 - Section 10 - Indicative content - Taught in Class

## **KSB 16**

**K16 Function and features of significant digital system components; typical architectures; common vulnerabilities in digital systems; principles and common practice in digital system security.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS202 - page 58 - Section 10 Indicative content - Taught in Class

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

## **KSB 17**

**K17 Programming or scripting languages.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS103 - page 33 - Section 10 Indicative content - Taught in Class through creation of a programme

Document 07. NCS203 - page 63 - Section 10 Indicative content - Taught in Class through creation of a programmes

## **KSB 18**

**S1 Discover vulnerabilities in a system by using a mix of research and practical exploration).**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

## **KSB 19**



**S2 Analyse and evaluate security threats and hazards to a system or service or processes. Use relevant external source of threat intelligence or advice (e.g. National Cyber Security Centre) Combine different sources to create an enriched view of cyber threats and hazards.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

Document 07. WKL200 - page 49 - Section 10 Indicative content - Taught in Class and through completion of a live industry project

## **KSB 20**

**S3 Research and investigate common attack techniques and relate these to normal and observed digital system behaviour and recommend how to defend against them. Interpret and demonstrate use of external source of vulnerabilities (e.g. OWASP, intelligence sharing initiatives, open source).**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

Document 07. NCS104- Page 38, Section 10 - Indicative content - Taught in class

## **KSB 21**

**S4 Undertake security risk assessments for simple systems without direct supervision and propose basic remediation advice in the context of the employer.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

## **KSB 22**

**S5 Source and analyse security cases and describe what threats, vulnerability or risks are mitigated and identify any residual areas of concern.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

Document 07. WKL200 - page 49 - Section 10 Indicative content - Taught in Class and through completion of a live industry project

## **KSB 23**

**S6 Analyse employer or customer requirements to derive security objectives and taking account**

**of the threats and overall context develop a security case which sets out the proposed security measures in the context with reasoned justification.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WKL200 - page 49 - Section 10 Indicative content - Taught in Class and through comple  
Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module  
Document 07. NCS201 - Page 53 - Section 10 - Indicati

## **KSB 24**

**S7 Identify and follow organisational policies and standards for information and cyber security and operate according to service level agreements or other defined performance targets.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WKL200 - page 49 - Section 10 Indicative content - Taught in Class and through completion of a live industry project  
Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module with previous industry

## **KSB 25**

**S8 Configure, deploy and use computer, digital network and cyber security technology.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

All Modules - Sections 10 - Indicative contents

## **KSB 26**

**S9 Recommend improvements to the cyber security posture of an employer or customer based on research into future potential cyber threats and considering threat trends.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WKL200 - page 49 - Section 10 Indicative content - Taught in Class and through completion of a live industry project  
Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

## **KSB 27**

**S10 Design, build, test and troubleshoot a network incorporating more than one subnet with static and dynamic routes, to a given design requirement without supervision. Provide evidence that the system meets the design requirement.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS101- Page 24, Section 10 - Indicative content - Taught in Class

Document 07. NCS201 - Page 53 - Section 10 - Indicative content - Taught in Class

Document 07. NCS202 - page 58 - Section 10 Indicative content - Taught in Class

## **KSB 28**

**S11 Analyse security requirements (functional and non-functional security requirements that may be presented in a security case) against other design requirements (e.g. usability, cost, size, weight, power, heat, supportability etc.), given for a given system or product. Identify conflicting requirements and propose, with reasoning, resolution through appropriate trade-offs.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WKL200 - page 49 - Section 10 Indicative content - Taught in Class and through complete

Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module

## **KSB 29**

**S12 Design and build, systems in accordance with a security case within broad but generally well-defined parameters. This should include selection and configuration of typical security hardware and software components. Provide evidence that the system has properly implemented the security controls required by the security case.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WKL200 - page 49 - Section 10 Indicative content - Taught in Class and through completion of a live industry project

Document 07. NCS201 - Page 53 - Section 10 - Indicative content - Taught in Class

## **KSB 30**

**S13 Write program code or scripts to meet a given design requirement in accordance with employers' coding standards.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS103 - page 33 - Section 10 Indicative content - Taught in Class through creation of a programme

Document 07. NCS203 - page 63 - Section 10 Indicative content - Taught in Class through creation of a programmes

## **KSB 31**

**S14 Design systems employing encryption to meet defined security objectives. Develop and implement a plan for managing the associated encryption keys for the given scenario or system.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS103 - page 33 - Section 10 Indicative content - Taught in Class through creation of a programme

Document 07. NCS201 - Page 53 - Section 10 - Indicative content - Taught in Class

## **KSB 32**

**S15 Use tools, techniques and processes to actively prevent breaches to digital system security.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS202 - page 58 - Section 10 Indicative content - Taught in Class

## **KSB 33**

**S16 Conduct cyber-risk assessments against an externally (market) recognised cyber security standard using a recognised risk assessment methodology.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

## **KSB 34**

**S17 Identify cyber security threats relevant to a defined context.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

Document 07. WKL200 - page 49 - Section 10 Indicative content - Taught in Class and through completion of a live industry project

## **KSB 35**

**S18 Develop information security policies or processes to address a set of identified risks, for example from security audit recommendations.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

Document 07. WKL200 - page 49 - Section 10 Indicative content - Taught in Class and through completion of a live industry project  
Document 07. WRL100- Page 18, Section 10

## **KSB 36**

**S19 Develop information security policies within a defined scope to take account of legislation and regulation relevant to cyber security.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class  
Document 07. NCS201 - Page 53 - Section 10 - Indicative content - Taught in Class  
Document 07. WKL200 - page 49 - Section 10 Indicative content - Taught in Class

## **KSB 37**

**S20 Take an active part in a security audits against recognised cyber security standards, undertake gap analysis and make recommendations for remediation.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

## **KSB 38**

**S21 Develop plans for incident response for approval within defined governance arrangements for incident response.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WKL200 - page 49 - Section 10 Indicative content - Taught in Class and through complete  
Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module

## **KSB 39**

**S22 Develop plans for local business continuity for approval within defined governance arrangements for business continuity.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WKL200 - page 49 - Section 10 Indicative content - Taught in Class and through complete  
Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module

## **KSB 40**

**S23 Assess security culture using a recognised approach.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WKL200 - page 49 - Section 10 Indicative content - Taught in Class and through completing year long project

Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module

**KSB 41**

**S24 Design and implement a simple 'security awareness' campaign to address a specific aspect of a security culture.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. PFD200 - page 44 - Section 10 Indicative content - Taught in Class and through completing a campaign to the FE Students in the institution

**KSB 42**

**S25 Integrate and correlate information from various sources (including log files from different sources, digital system monitoring tools, Secure Information and Event Management (SIEM) tools, access control systems, physical security systems) and compare to known threat and vulnerability data to form a judgement based on evidence with reasoning that the anomaly represents a digital system security breach.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WKL200 - page 49 - Section 10 Indicative content - Taught in Class and through completing year long project

**KSB 43**

**S26 Recognise anomalies in observed digital system data structures (including by inspection of network packet data structures) and digital system behaviours (including by inspection of protocol behaviours) and by inspection of log files and by investigation of alerts raised by automated tools including SIEM tools.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

**KSB 44**

**S27 Accurately, objectively and concisely record and report the appropriate cyber security**

information, including in written reports within a structure or template provided.

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WKL200 - page 49 - Section 10 Indicative content -

Document 07. WRL100- Page 18, Section 10 - Indicative content -

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

## **KSB 45**

**S28 Configure digital system monitoring and analysis tools (e.g. SIEM tools), taking account of threat & vulnerability intelligence, indicators of compromise.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

## **KSB 46**

**S29 Undertake root cause analysis of events and make recommendations to reduce false positives and false negatives.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in Class

## **KSB 47**

**S30 Manage local response to non-major incidents in accordance with a defined procedure.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WKL200 - page 49 - Section 10 Indicative content - Taught in Class and through completing year long project

Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module

## **KSB 48**

**B1 Logical - Applies logical thinking, for example, uses clear and valid reasoning when making decisions related to undertaking the work instructions.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

## **KSB 49**

**B2 Analytical - working with data effectively to see patterns, trends and draw meaningful conclusions.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Behaviour Mapping Document 05. Programme Specification Page 29

## **KSB 50**

**B3 Works independently and takes responsibility. For example, works diligently regardless of how much they are being supervised, and stays motivated and committed when facing challenges.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Behaviour Mapping Document 05. Programme Specification Page 29

## **KSB 51**

**B4 Shows initiative, being resourceful when faced with a problem and taking responsibility for solving problems within their own remit.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Behaviour Mapping Document 05. Programme Specification Page 29

## **KSB 52**

**B5 Thorough & organised. For example uses their time effectively to complete work to schedule and takes responsibility for managing their own work load and time.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Behaviour Mapping Document 05. Programme Specification Page 29

## **KSB 53**

**B6 Works effectively with a wide range of people in different roles, internally and externally, with a regard to inclusion & diversity policy.**

**Is the statement covered within the qualification?**

Fully covered



**Where within the qualification is the statement covered?**

Behaviour Mapping Document 05. Programme Specification Page 29

**KSB 54**

**B7 Communicates effectively in a wide variety of situations for example contributing effectively to meetings and presenting complex information to technical and non-technical audiences.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Behaviour Mapping Document 05. Programme Specification Page 29

**KSB 55**

**B8 Maintains a productive, professional and secure working environment.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Behaviour Mapping Document 05. Programme Specification Page 29

**KSB 56**

**B9 Creative - taking a variety of perspectives, taking account of unpredictable adversary and threat behaviours and approaches, bring novel and unexpected solutions to address cyber security challenges.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Behaviour Mapping Document 05. Programme Specification Page 29

**KSB 57**

**B10 Problem Solving - Identifies issues quickly, solves complex problems and applies appropriate solutions. Dedicated to finding the true root cause of any problem and find solutions that prevent recurrence.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Behaviour Mapping Document 05. Programme Specification Page 29

**Network engineer**

**Network engineer**

**Knowledge, skills and behaviours coverage within the**

# qualification

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## KSBgenerator

### KSB

#### KSB 1

**K1 The causes and consequences of network and IT infrastructure failures.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS101 - page 24 - Section 10 Indicative content - Taught in class

#### KSB 2

**K2 The architecture of typical IT systems, including hardware, OS, server, virtualisation, voice, cloud, and applications.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS101 - page 24 - Section 10 Indicative content - Taught in class

Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class

#### KSB 3

**K3 The techniques for systems performance and optimisation.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class

Document 07. NCS202 - page 58 - Section 10 Indicative content - Taught in class

## **KSB 4**

**K4 Diagnostic techniques and tools to interrogate and gather information regarding systems performance.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class

Document 07. NCS202 - page 58 - Section 10 Indicative content - Taught in class

## **KSB 5**

**K5 Organizational procedures to deal with recording information effectively and in line with protocols.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module with previous industry project

## **KSB 6**

**K6 Service Level Agreements (SLAs) and their application to delivering network engineering activities in line with contractual obligations and customer service.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module with previous industry project

## **KSB 7**

**K7 Their role in Business Continuity and Disaster Recovery.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module with previous industry project

## **KSB 8**

**K8 The purposes and uses of ports and protocols.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS101 - page 24 - Section 10 Indicative content - Taught in class

Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class

**KSB 9**

**K9 Devices, applications, protocols, and services at their appropriate OSI and/or TCP/IP layers.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS101 - page 24 - Section 10 Indicative content - Taught in class

**KSB 10**

**K10 The concepts and characteristics of routing and switching.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS101 - page 24 - Section 10 Indicative content - Taught in class

**KSB 11**

**K11 The characteristics of network topologies, types, and technologies.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS101 - page 24 - Section 10 Indicative content - Taught in class

**KSB 12**

**K12 Wireless technologies and configurations.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class

**KSB 13**

**K13 Cloud concepts and their purposes.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class

## **KSB 14**

**K14 Functions of network services.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class

## **KSB 15**

**K15 The different types of network maintenance.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module with previous industry project

Document 07. WKL200- Page 49, Section 10 - Indicative content - Through Teaching and year long live industry project.

## **KSB 16**

**K16 How current legislation relates to or impacts occupation.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS104 - page 38 - Section 10 Indicative content - Taught in class

## **KSB 17**

**K17 Troubleshooting methodologies for network and IT infrastructure.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS101 - page 24 - Section 10 Indicative content - Taught in class

## **KSB 18**

**K18 How to integrate a server into a network.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class

**KSB 19**

**K19 The types of security threats to networks and IT infrastructure assets.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in class

**KSB 20**

**K20 How to use tools to automate network tasks.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class

**KSB 21**

**K21 Approaches to change management.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WKL200- Page 49, Section 10 - Indicative content - Through Teaching and year long live industry project.

**KSB 22**

**S1 Apply the appropriate tools and techniques when securely operating and testing Networks.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class

Document 07. NCS202 - page 58 - Section 10 Indicative content - Taught in class

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in class

**KSB 23**

**S2 Install and configure the elements required to maintain and manage a secure Network.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class  
Document 07. NCS202 - page 58 - Section 10 Indicative content - Taught in class

## **KSB 24**

**S3 Implement techniques to monitor and record systems performance in line with defined specifications.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class

Document 07. NCS202 - page 58 - Section 10 Indicative content - Taught in class

## **KSB 25**

**S4 Maintain security and performance of the system against known and standard threats.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS204 - page 67 - Section 10 Indicative content - Taught in class

## **KSB 26**

**S5 Apply the appropriate tools and techniques to identify systems performance issues.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class

Document 07. NCS202 - page 58 - Section 10 Indicative content - Taught in class

## **KSB 27**

**S6 Apply the appropriate tools and techniques to gather information to troubleshoot issues and isolate, repair or escalate faults.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS101 - page 24 - Section 10 Indicative content - Taught in class

Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class

## **KSB 28**

**S7 Communicate outcomes of tasks and record in line with organisational procedures and SLAs including adherence to good customer service standards.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module with previous industry project

Document 07. WKL200- Page 49, Section 10 - Indicative content - Through Teaching and year long live industry project.

## **KSB 29**

**S8 Upgrade, apply and test components to systems configurations ensuring that the system meets the organisation's requirements and minimises downtime. This should include backup processes.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WKL200- Page 49, Section 10 - Indicative content - Through Teaching and year long live industry project.

Document 07. NCS202 - page 58 - Section 10 Indicative content - Taught in class

## **KSB 30**

**S9 Record task details whether face-to-face, remote or in writing in line with organisational requirements.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module with previous industry project

Document 07. NCS101 - page 24 - Section 10 Indicative content - Taught in class

## **KSB 31**

**S10 Interpret information received from a manager, customer or technical specialist and accurately implement the defined requirements.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class

## **KSB 32**

**S11 Monitor, identify and implement required maintenance procedures.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**



Document 07. NCS101 - page 24 - Section 10 Indicative content - Taught in class  
Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class

### **KSB 33**

**S12 Implement techniques to optimise systems performance in line with defined specifications.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS102 - page 28 - Section 10 Indicative content - Taught in class

### **KSB 34**

**S13 Organise and prioritise clients/stakeholders' requests in line with SLAs and organization processes.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module with previous industry project

Document 07. WKL200- Page 49, Section 10 - Indicative content - Through Teaching and year long live industry project.

### **KSB 35**

**S14 Explain their job role within the business context to stakeholders to enable a clear understanding on both sides of what their remit is and convey technical constraints in appropriate language considering accessibility and diversity implications.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module with previous industry project

Document 07. WKL200- Page 49, Section 10 - Indicative content - Through T

Document 07. PFD- Page 44, Section 10 - Indi

### **KSB 36**

**S15 Operate securely and apply the appropriate process, policies, and legislation within their business responsibilities.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class

### **KSB 37**

**S16 Communicate with a range of stakeholders taking into consideration of organisations cultural awareness and technical ability.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module with previous industry project

Document 07. WKL200- Page 49, Section 10 - Indicative content - Through Teaching and year long live industry project.

## **KSB 38**

**S17 Apply the appropriate level of responsibility when planning and prioritizing work tasks.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. PFD- Page 44, Section 10 - Indicative content - Teaching and Personal reflection

## **KSB 39**

**S18 Apply the relevant numerical skills (Binary, dotted decimal notation) required to meet the defines specifications.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS101 - page 24 - Section 10 Indicative content - Taught in class

## **KSB 40**

**S19 Ensure compliance of network engineering outputs with change management processes.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. WRL100- Page 18, Section 10 - Indicative content - Throughout the year long module with previous industry project

Document 07. WKL200- Page 49, Section 10 - Indicative content - Through Teaching and year long live industry project.

## **KSB 41**

**S20 Select the appropriate tools and comply with organisation policies and processes when upgrading systems.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Document 07. NCS101 - page 24 - Section 10 Indicative content - Taught in class  
Document 07. NCS102 - page 28 - Section 10 Indicative content - Taught in class  
Document 07. NCS201 - page 53 - Section 10 Indicative content - Taught in class  
NCS202

**KSB 42**

**B1 Work independently and demonstrate initiative being resourceful when faced with a problem and taking responsibility for solving problems within their own remit.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Page 30 of 05. Programme Specification

**KSB 43**

**B2 Work securely within the business.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Page 30 of 05. Programme Specification

**KSB 44**

**B3 Work within the goals, vision, and values of the organisation.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Page 30 of 05. Programme Specification

**KSB 45**

**B4 Take a wider view of the strategic objectives of the tasks/ projects they are working on including the implications for accessibility by users and diversity.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Page 30 of 05. Programme Specification

**KSB 46**

**B5 Works to meet or exceed customers' requirements and expectations.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Page 30 of 05. Programme Specification

**KSB 47**

**B6 Identifies issues quickly, investigates and solves complex problems and applies appropriate solutions. Ensures the true root cause of any problem is found and a solution is identified which prevents recurrence.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Page 30 of 05. Programme Specification

**KSB 48**

**B7 Committed to continued professional development to ensure growth in professional skill and knowledge.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Page 30 of 05. Programme Specification

**KSB 49**

**B8 Work effectively under pressure showing resilience.**

**Is the statement covered within the qualification?**

Fully covered

**Where within the qualification is the statement covered?**

Page 30 of 05. Programme Specification

## **Additional occupationally relevant content**

### **Additional occupationally relevant content**

#### **Item 1**

As well as the content aligned to the knowledge, skills and behaviours in the occupational standard, the qualification can include additional occupationally relevant content which is deemed of value to employers. Awarding bodies are asked to justify any content that does not directly align to the occupational standard, using evidence from employers.

Content should be identified at a unit or modular level and each item should be added separately by using the Add Item button. If the qualification does not include any additional content, please leave this section blank.

#### **Unit or module containing additional content**

**Please give a short description of the additional content**

**Where within the qualification is the additional content covered?**

**Please provide an explanation of how the content is relevant to the occupation, including evidence from employers that supports its inclusion in the qualification.**

## **Assessment methods**

### **Assessment methods**

**Please confirm that the assessment covers all of the content relevant to the knowledge, skills and behaviours in the occupational standard.**

Yes

**Please outline the methods used to assess the content and provide a rationale for why these methods are valid for the qualification.**

Assessment methods are designed to be as real world as possible with the majority of assessment taking place as practical for a given scenario that could be from past relevant industry partner case studies or a fictional scenario created by the team. A mix of Project, Presentation, Portfolio are also used to where it is relevant to develop behaviours or fits the industry relevance while maintaining academic integrity inline with our academic regulations. Practical assessment is undertaken in our specially designed labs that were developed with our industry partners from the Digital Advisory board that contains members from local and international business (Accenture, DXC, W@terstones) to simulate real working environments. All assessment must follow the Assessment framework (attached) to uphold the rigour of the programme and is Internally moderated by subject experts at Level 4 and Externally moderated by another institutions subject expert at level 5.

Staff work with our Industry links to ensure assessment is up to date with industry practice and often receive scenarios and industry context or in the case of Work Based Learning Students undertake a live project supported by lecturers but for a real-world client.

## **Employer engagement**

### **Employer engagement**

Please describe how employers and industry practitioners were consulted throughout the development of the qualification, including:

- the process of identifying and recruiting relevant employers
- how employers were involved in the development, review and validation of the qualification

materials.

**Please describe how employers and industry practitioners were consulted throughout the development of the qualification.**

Employer-led curriculum is at the core of what we deliver in Newcastle College University Centre. Employers must be included in the development of all our programmes and would not be validated for running without employer input. Before a new programme starts the need for it is identified either by our industry partners that sit on our Digital Advisory Board (A panel of employers and our academics lead by the Director of Industrial Strategy that meet to mutually benefit both the employers and the College) or by lecturers through their research and the local enterprise partnerships. The Programme team would meet with employers to discuss content and modules required for the programme as well as current students for their input to. At this point everything from indicative content, resource and assessment is discussed. The programme team then develop the documentation for the programme and 9 weeks before the validation this is shared with the awarding body, employers and external academics. At the validation event both external academic and employers are a required part of the panel that makes the decision if the programme is fit for purpose and able to be validated. After this the programme is reviewed annually as part of the college annual planning process which again includes the involvement of employers to ensure the currency of the programme.

The largest single event that supported us was when we invited numerous employers to a 'hackathon' where more than 6 different IT companies visited to make comment, change and suggestions to the design of our programmes, in the images below you can see the structure of the programme and post it notes (different colour for different employers denoting comments).

Employers were also consulted as part of the HTQ mapping exercise that was undertaken for this application.