



**Institute for Apprenticeships
& Technical Education**

Higher technical qualification submission form

Awarding body information

Awarding body information

What is the name of the awarding body?

TEC Partnership (Grimsby Institute of Further and Higher Education)

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 Digital and Technology Solutions

Is the qualification on the Ofqual register?

Yes

What is the qualification number, as appears on the Ofqual register?

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?

Network engineer/Level: 4

Cyber-security technologist/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?

Pages 21-22 for module Computer networking fundamentals - indicative content, both practical and theoretical elements

Page 46 for module Computer Security - Network & systems - theoretical elements

Page 50 for module network management and operations

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?

Page 20 - rationale for module computer networking fundamentals

Page 22 - practical elements of module

page 46 - theoretical elements of module

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?

page 46 - theoretical and practical elements of module, all elements of the indicative content both practical and theoretical relate to this KSB, particularly theoretical bullet point 2, relating to business policies

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?

page 46 - theoretical and practical elements of module, all elements of the indicative content both practical and theoretical relate to this KSB, particularly theoretical bullet points 3,4,5

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?

page 46 - theoretical and practical elements of module, many elements of the indicative content both practical and theoretical relate to this KSB, primarily bullet point 2

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?

page 46 - practical elements of module relating to carry out post and functional testing

page 50 - user access management, traffic monitoring

page 22 - awareness and implementation of service management within networking

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?

page 44 - learning outcome 4, aims and distinctive features" also consider various counter measures and fall-down solutions."

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?

page 46 - theory elements of module relating to understanding legal and ethical responsibilities, of which these range of laws will relate to

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?

page 46 - theory elements of module relating to understanding legal and ethical responsibilities, of which this good practice and ethical principles will be covered under

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?

page 46 - theory elements of module relating to covering the range of policies an organisations will face
page 45 - assessment - planning and design - assessment will include the planning and creation of security cases.

KSB 11

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

Is the statement covered within the qualification?

Not covered

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

- at the time of working with employers to develop this module and foundation degree, this was not a knowledge point that was covered. Modules may be amended to include this key knowledge

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?

page 46 - theory and practical elements of module. theory points 1, 5,6,7 as well as all practical elements relating to using these hardware and software components to deploy them.

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?

page 46 - theory elements bullet point 4 relating to ciphers and code breaking techniques, bullet point 5 relating to encryption and ciphers

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?

page 46 - theory elements bullet point 2 relating to risk assessment and asset identification.

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?

page 46 - theory elements bullet point 2 relating to the range of policies in an organisation, and legal responsibilities and ethical responsibilities.

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?

page 46 - theory elements bullet points 1, 3, 7

KSB 17

K17 Programming or scripting languages.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 46 - theory elements bullet points 5 relating to SQL and PDO

page 40 learning outcomes 1,2,3,4, all relating to creating server client databases that will need server and client side programming languages

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?

page 46 - theory and practical elements relating to penetration testing

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?

page 46 - theory and practical elements relating to penetration testing, as well as testing of configured secured networks

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?

page 46 - theory elements relating to common threats - bullet point 3

Page 44 - learning outside 2 requiring knowledge and skills to secure a routed network

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?

page 46 - theory elements relating to risk assessments - bullet point 2

page 45 relating to rationale for planning and design assessment, which will include the creating of risk assessments

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?

page 46 - theory elements relating to risk assessments - bullet point 2

page 45 relating to rationale for planning and design assessment, which will include the creating of risk assessments

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?

page 46 - theory elements relating to risk assessments - bullet point 2

page 45 relating to rationale for planning and design assessment, which will include the creating of risk assessments

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?

page 46 - theory elements relating to organisational policies and standards- bullet point 2

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?

page 46 - relates to all practical elements of this module

page 45 relating to rationale for product development & testing assessment

page 49 relating to rationale for network infrastructure and configuration case study

page 21 rationale

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?

Not covered

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

within the practical networking modules in this foundation degree, practical assessments relate to the planning, design and development of secured networks based on a simulated client case study. While not specifically covered, learners will implement cyber security improvements to networks in order to secure against current and future threats

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?

page 46 - relates to all practical elements of this module

page 45 relating to rationale for product development & testing assessment

page 49 relating to rationale for network infrastructure and configuration case study

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?

page 38 - indicative content for project planning, requiring an understanding of cost benefit analysis, budgets, risk assessment and resources

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?

page 46 - relates to all practical elements of this module

page 45 relating to rationale for product development & testing assessment

page 49 relating to rationale for network infrastructure and configuration case study

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?

page 28 - web development module, learning outcomes, page 29, web development product assessment

page 40 - all four learning outcomes

page 41 - product development assessment rationale

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?

page 46 - relates to all practical elements of this module

page 45 relating to rationale for product development & testing assessment

page 49 relating to rationale for network infrastructure and configuration case study

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?

page 46 - relates to all practical elements of this module, particularly penetration testing and post/functional testing

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?

Partially covered

Where within the qualification is the statement covered?

page 45 rationale for planning and design of secured network, which will include conducting risk assessments against standards

page 46 theory point 2 which relates to risk assessments and vulnerabilities

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

While risk assessments are covered within this module, specific market standards are not mentioned but will be covered. indicative content can be amended to reflect these standards and methodologies

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?

page 45 rationale for planning and design of secured network, which will include identifying potential threats

page 46 theory bullet points 2 and 3

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?

page 45 rationale for planning and design of secured network, which will include developing network policies

page 46 theory point 2

page 45 practical points 1 and 3

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?

page 45 rationale for planning and design of secured network, which will include developing network policies

page 46 theory point 2

page 45 practical points 1 and 3

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?

page 45 rationale for planning and design of secured network, which will include developing network policies

page 46 theory point 2

page 45 practical points 1 and 3

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?

page 45 rationale for planning and design of secured network, which will include developing network

policies
page 46 theory point 2
page 45 practical points 1 and 3

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?

page 45 rationale for planning and design of secured network, which will include developing network policies
page 46 theory point 2
page 45 practical points 1 and 3, primarily point 1

KSB 40

S23 Assess security culture using a recognised approach.

Is the statement covered within the qualification?

Not covered

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

The statement refers to being based in an organisation or workplace e.g understanding a particular company's brand, goals and commercial objectives. The practical assessments within the networking modules of this foundation degree will include assessment, but relating to this specific reasoning

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?

Not covered

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

The planning, design and practical elements of this degree do not relate to creating awareness campaigns or marketing materials, but rather the aspects of creating the physical networks themselves

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?

page 46, practical points 3,4,5 and theory points 3 and 4 which will include audit logging and use of traffic monitoring software to identify and analyse anomalies and breaches

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?

page 46, practical points 3,4,5 and theory points 3 and 4 which will include audit logging and use of traffic monitoring software to identify and analyse anomalies and breaches

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?

page 46, practical points 3,4,5 and theory points 3 and 4 which will include audit logging and use of traffic monitoring software to identify and analyse anomalies and breaches

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?

page 46 practical elements point 1 and 2, which will include the use of traffic and digital monitoring systems

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?

Partially covered

Where within the qualification is the statement covered?

page 46 practical elements point 1 and 2, which will include the use of traffic and digital monitoring systems

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

the specifics of making recommendations to reduce false positive and negatives do not fall as part of the practical or design assessments within the networking modules of this degree

KSB 47

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

Is the statement covered within the qualification?

Not covered

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

The planning, design and practical elements of this degree relate to the physical creation and securing of networks, though there will be elements of penetration testing and simulating of threats which may relate to this specific skill

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?

page 45 - rationale for both planning & design, and product development assessments

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?

page 16 - learning outcome 2 and 3

page 32 - learning outcome 3

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?

page 45, learning and teaching strategy under heading WORKSHOP, second paragraph

page 5 - point 11

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?

page 45, learning and teaching strategy under heading WORKSHOP, second paragraph
page 5 - point 11

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?

page 5 - point 11 of which professional and business skills would include this particular behaviour

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?

page 5 - point 11 of which professional and business skills would include this particular behaviour, as well as interpersonal skills

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?

page 5 - point 11 of which professional and business skills would include this particular behaviour, as well as interpersonal skills

page 49 - rationale for both assessments, which are presentations that will require communication and presenting.

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?

page 5 - point 11 of which professional and business skills would include this particular behaviour

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?

page 45 - planning and testing, product development and testing
page 44 learning outcome 1 and 2
page 5 points 5, 8, 9

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?

page 5 points 5, 7 10

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?

page 16 rationale, learning outcome 2

page 46 - theoretical content of module

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?

page 22 - theoretical content

page 46 - theoretical content

page 50 - theoretical content

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?

page 22 - practical content

page 46 - practical content

page 50 - practical content

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?

page 22 - practical content
page 46 - practical content
page 50 - practical content

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?

page 46 - theoretical content relating to policies

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?

page 46 - theoretical content relating to policies

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?

page 46 - theoretical content relating to policies
page 46 - practical content relating to designing security measures and backup systems

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?

page 22 - practical content
page 46 - practical content
page 50 - practical content

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?

page 22 - practical and theoretical content

page 46 - practical and theoretical content

page 50 - practical and theoretical content

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?

page 22 - practical and theoretical content

page 46 - practical and theoretical content

page 50 - practical and theoretical content

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?

page 22 - practical and theoretical content

page 46 - practical and theoretical content

page 50 - practical and theoretical content

KSB 12

K12 Wireless technologies and configurations.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 22 - practical and theoretical content

page 46 - practical and theoretical content

page 50 - practical and theoretical content

KSB 13

K13 Cloud concepts and their purposes.

Is the statement covered within the qualification?

Not covered

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

the networking modules within this validation document will be amended to include these concepts and

technologies.

KSB 14

K14 Functions of network services.

Is the statement covered within the qualification?

Fully covered

Where within the qualification is the statement covered?

page 22 - practical and theoretical content

page 46 - practical and theoretical content

page 50 - practical and theoretical content

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?

page 22 - practical content

page 46 - practical content

page 50 - practical content

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?

page 48 - rationale

page 3 - aim #1 of programme

page 45 ethical issues (and ethical issues of other networking modules)

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?

page 22 - practical elements of the module

page 46 - theoretical content

page 50 - theoretical and practical content

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?

page 22 practical content, page 21 network design and implementation

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?

page 46 - theoretical elements

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?

page 50 - traffic monitoring

page 22 - service management

KSB 21

K21 Approaches to change management.

Is the statement covered within the qualification?

Not covered

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

networking modules in validation document will be amended to include change management

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?

page 22 practical content

page 46 practical content

page 50 practical content

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?

page 22 practical content

page 46 practical content

page 50 practical content

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?

page 22 practical content relating to service management

page 46 post/functional testing

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?

page 46 - theoretical elements and practical elements - such as penetration testing

page 50 - practical elements

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?

page 50 - traffic monitoring

page 22 - service management

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?

page 22 - practical elements

page 46 - practical elements

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?

Not covered

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

further content relating to service standards and communicating outcomes will be added to the validation document at the next amendment

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?

page 22 practical elements for fault finding and testing
page 46 relating to testing

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?

page 46 relating to documenting networks
page 21, 45, 59 case study practical assessments

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?

page 46 relating to documenting networks
page 21, 45, 59 case study practical assessments and design elements

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?

page 22 osi fault finding and service management, page 46 practical content for bimulation of networks

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?

page 22 osi fault finding and service management, page 46 practical content for bimulation of networks

KSB 34

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

Is the statement covered within the qualification?

Not covered

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

further content relating to service standards and communicating outcomes will be added to the validation document at the next amendment

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?

page 20 rationale, page 44 rationale, page 48 rationale

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?

page 46 theoritical relating to policies

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?

Not covered

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

The area is unsuitable for coverage in a classroom based qualification, as this is an internal assessment whereas this may require more outside involvement with a range of stakeholders

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?

page 21, 45, 59 case study practical assessments

page 36, agile project management rationale and learning outcome 3

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?

page 22 theoretical content

KSB 40

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

Is the statement covered within the qualification?

Not covered

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

change management processes will be embedded within the networking modules in this validation document when changed.

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?

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 21, 45, 59 case study practical assessments - all are independent networking assessments

KSB 43

B2 Work securely within the business.

Is the statement covered within the qualification?

Not covered

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

- The statement refers to being based in an organisation or workplace

KSB 44

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

Is the statement covered within the qualification?

Not covered

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

The statement refers to being based in an organisation or workplace

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 21, 45, 59 case study practical assessments - students will be completing these assessments to a defined industry relevant case study.

KSB 46

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

Is the statement covered within the qualification?

Partially covered

Where within the qualification is the statement covered?

page 21, 45, 59 case study practical assessments - students will be completing these assessments to a defined industry relevant case study.

Please provide an explanation for the omission or partial coverage of this statement from the qualification.

The statement refers to being based in an organisation or workplace

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 21, 45, 59 case study practical assessments - students will be completing these assessments to a defined industry relevant case study.

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 21, 45, 59 case study practical assessments - elements of evaluation and critical reflection are included these case studies

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 21, 45, 59 case study practical assessments - students will be completing these assessments to a defined industry relevant case study, to appropriate and realistic time-constrained deadlines

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.

The teaching and learning strategy for this programme will be based around a combination of traditional lectures and seminars for the delivery of underpinning theory, core module content and the demonstration of practical skills; together with labs/workshops to allow students to apply and develop practical and technical skills. The balance of formal delivery to lab/workshop sessions will be determined by the requirements of each module. In addition to the combination of lectures/seminars and labs/workshops, students will be able to access tutorial support in order to address individual needs (in addition to more traditional tutorials covering pastoral support requirements) and in the case of self-directed research and/or development projects each student will be entitled to 5 hours of academic supervision per relevant module.

Practical and professional skills will be developed through projects, briefs and assignments which develop and encourage practical application of learning. Both core modules and the later specialist modules will employ this approach to ensure that learning outcomes are planned to reflect real world business practices and requirements.

Practical and professional skills will be developed through projects, briefs and assignments which develop and encourage practical application of learning. Both core modules and the later specialist modules will employ this approach to ensure that learning outcomes are planned to enhance the business or organisation in which they are employed.

The teaching and learning strategy is focussed on producing independent and competent practitioners who have a rounded knowledge and appreciation of digital and technology solutions whilst being able to specialise in an area to contribute to an organisation. The ability to maintain cognisance of the constant

changes within digital and technology opportunities, threats and developments and their application to business organisations is a core aim within the strategies for teaching and learning on this programme.

Level 4

Modules at level 4 are designed with an understanding that students joining the programme may have widely varying skills and experience and therefore the subject matter of any given module may be unfamiliar to the student. With that in mind each level 4 module covers the fundamental theories of its subject as if the subject is being delivered 'from scratch' within the earliest stages of the module; however the coverage of the fundamentals will be limited and it is expected that students who are unfamiliar with a module's subject will also carry out independent study in that area and will make use of tutorial support to address any shortfall or gaps in their knowledge and skills. From this foundation students will then go on to develop knowledge and skills to meet the level 4 outcomes.

The approach at level 4 is still very much one of teaching and learning with tutors guiding students through the modules but actively encouraging independent study and work that goes beyond threshold learning outcomes with deeper exploration of each modules indicative content.

All modules will encourage thorough secondary research and the application of that research, critical thinking, analysis and evaluation, and reflective practice. This will be reflected in the assessment requirements and guidance for each module.

The balance between lecture/seminar and labs/workshops will reflect the emphasis on teaching.

Essential study skills, research skills and core professional skills are included at level 4 in order to ensure students are able to make the transition to level 5 successfully.

Level 5

Modules at level 5 will build upon modules covered at level 4 both directly and in combination and with this in mind level 4 modules will be identified as pre-requisites for level 5 modules where relevant.

At level 5 the approach will shift from one of teaching and learning to one of learning and teaching, implying that students will be expected to be more independent and capable of self-directed study with teaching intended as support for those areas where students identify additional support needs. Each module will still include delivery of relevant and new underpinning theory and new skills, but the balance between lectures/seminars and labs/workshops will shift with an increase in workshop time to allow students to carry out their own self-directed development activities.

This will culminate in students undertaking and completing a substantial (40 credit) Major Project in which delivery will support individual practice, research and project management.

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.

industry and employers were consulted throughout the process of creating module titles and the content within, this has also gone through a validation process to ensure the programme meets the requirements of HE and industry.