



Higher National Examination-based Graded Unit Specification

General information

This graded unit has been validated as part of the HNC Cyber Security. Centres are required to develop the assessment instrument in accordance with this validated specification.

Graded unit title: Cyber Security: Graded Unit 1 (SCQF level 7)

Graded unit code: J0J7 34

Type of examination: Closed-book

Publication date: June 2018

Source: Scottish Qualifications Authority

Version: 02

Graded unit purpose

This graded unit is designed to provide evidence that the learner has achieved the following principal aims of the HNC Cyber Security:

- ◆ To develop study and research skills.
- ◆ To develop knowledge and understanding in core areas of cyber security, such as digital forensics, ethical hacking and digital security.
- ◆ To prepare learners to progress to further study in cyber security in Further and/or Higher Education.

Credit points and level

1 Higher National Unit credit at SCQF level 7: (8 SCQF credit points at SCQF level 7)

Recommended entry to the graded unit

It is recommended that the learner should have completed or be in the process of completing the following units relating to the above principal aims prior to undertaking this graded unit:

- ◆ J0HJ 34 *Computer Networking: Concepts, Practice and Introduction to Security* (SCQF level 7)
- ◆ J0H9 34 *Data Security* (SCQF level 7)
- ◆ J0HL 34 *Digital Forensics* (SCQF level 7)
- ◆ J0HK 34 *Ethical Hacking* (SCQF level 7)

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Core Skills

Achievement of this unit gives automatic certification of the following:

Complete Core Skill *Problem Solving* at SCQF level 6

Core Skill component None

Opportunities to develop aspects of Core Skills are highlighted in the support notes of this graded unit specification.

Assessment support pack

The Assessment Support Pack (ASP) for this unit provides assessment and marking guidelines that exemplify the national standard for achievement. It is a valid, reliable and practicable assessment. Centres wishing to develop their own assessments should refer to the ASP to ensure a comparable standard. A list of existing ASPs is available to download from SQA's website (<http://www.sqa.org.uk/sqa/46233.html>).

Equality and inclusion

This graded unit has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on SQA's website:
www.sqa.org.uk/assessmentarrangements

Higher National Examination-based Graded Unit Specification: Designing the examination and assessing learners

Graded unit title: Cyber Security: Graded Unit 1 (SCQF level 7)

Assessment

This graded unit will be assessed by the use of a timed, **closed-book** examination developed by centres. The examination should provide the learner with the opportunity to produce evidence that demonstrates they have met the aims of this graded unit.

The assessment is an examination lasting **three hours**.

The examination should be designed to assess the learner's critical knowledge and understanding of the topics relating to the specific aims that this graded unit is designed to cover.

The examination will be marked out of **100**. Only whole marks should be used.

Section	Type of question	Number of questions	Marks per question	Total marks
1	Selected response	20	1	20
2	Constructed response	1	20	20
3	Constructed response	4	15	60

- ◆ **Section 1** will consist of 20 selected response questions, each worth one mark. This section will focus on cognitive abilities relating to **knowledge retention and comprehension of essential facts** for each of the four mandatory units recommended to be undertaken in preparation for the Graded Unit 1 examination.
- ◆ **Section 2** will consist of one constructed response question worth 20 marks. The question should be based on the learner's ability to **integrate knowledge and understanding** and **apply problem-solving techniques** within the context of topics from two or more of the units recommended to be undertaken in preparation for the Graded Unit 1 examination.
- ◆ **Section 3** will consist of four constructed response questions, each worth 15 marks. The questions may be split into several parts and each part given a separate mark. Marks should be indicated on the question paper, for example Question 1 part (a) 5 marks, part (b) 5 marks and (c) 5 marks. The questions are designed to assess **deeper cognitive skills** through constructed response questions. These will test that learners can apply knowledge and understanding to identify, explain and analyse questions relating to the topics covered in each of the units recommended to be undertaken in preparation for this Graded Unit 1 examination.

The questions and corresponding marks should be designed in accordance with the key topics (ie, the critical knowledge and skills to be covered in the examination), level of demand (eg, description, explanation, analysis, application) and relative mark allocation for each key topic outlined in the table below.

Higher National Examination-based Graded Unit Specification: Designing the examination and assessing learners (cont)

Graded unit title: Cyber Security: Graded Unit 1 (SCQF level 7)

Section 1

Key topics	Level of demand	% mark allocation for each key topic
<i>Data Security</i>	Ability to demonstrate fundamental knowledge and understanding introduced in this unit.	Five questions each worth 1 mark (5% of total)
<i>Digital Forensics</i>	Ability to demonstrate fundamental knowledge and understanding introduced in this unit.	Five questions each worth 1 mark (5% of total)
<i>Ethical Hacking</i>	Ability to demonstrate fundamental knowledge and understanding introduced in this unit.	Five questions each worth 1 mark (5% of total)
<i>Computer Networking: Concepts, Practice and Introduction to Security</i>	Ability to demonstrate fundamental knowledge and understanding introduced in this unit.	Five questions each worth 1 mark (5% of total)
Total marks for Section 1		20

Section 2

Key topics	Level of demand	% mark allocation for each key topic
Integrated question incorporating at least two of the following units (mandatory): <ul style="list-style-type: none"> ◆ <i>Data Security</i> ◆ <i>Digital Forensics</i> ◆ <i>Ethical Hacking</i> ◆ <i>Computer Networking: Concepts, Practice and Introduction to Security</i> 	Application, analysis, synthesis and evaluation	One question worth 20 marks (20% of total)
Total marks for Section 2		20

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Section 3

Key topics	Level of demand	% mark allocation for each key topic
Data Security	Knowledge, comprehension, application, analysis, synthesis and evaluation	One question worth 15 marks (15% of total)
Digital Forensics	Knowledge, comprehension, application, analysis, synthesis and evaluation	One question worth 15 marks (15% of total)
Ethical Hacking	Knowledge, comprehension, application analysis, synthesis and evaluation	One question worth 15 marks (15% of total)
Computer Networking: Concepts, Practice and Introduction to Security	Knowledge, comprehension, application, analysis, synthesis and evaluation	One question worth 15 marks (15% of total)
Total marks for Section 3		60

Conditions of assessment

The examination is closed-book. The examination should be unseen and the assessment should be conducted in controlled and invigilated conditions. At all times, the security, integrity and confidentiality of the examination must be ensured. The assessment is based on a written examination lasting three hours.

No reference material should be allowed into the examination room. The examination should take place under closed-book conditions. Calculators are not permitted. All examination question papers, scripts and rough working must be returned to the invigilator at the end of the examination. Where published SQA exemplars are used, these must be returned to, and retained by, the centre.

The examination should normally be sat in one sitting. However, it is permissible to alter this where local circumstances require alternative arrangements (perhaps to accommodate e-assessment).

Higher National Examination-based Graded Unit Specification: Designing the examination and assessing learners (cont)

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Assessing and grading learners

Learners who meet the minimum evidence requirements will have their achievement graded as an A, B or C. The grade related criteria to be used to judge learner performance for this graded unit is specified in the following table.

Grade related criteria	
Grade A	Grade C
<p>Is a seamless, coherent piece of work or exam script which consistently:</p> <ul style="list-style-type: none">♦ interprets and understands the question in a way that demonstrates insight and clear understanding of issues and relationships♦ demonstrates a comprehensive analysis and evaluation of relevant information♦ offers logically structured and coherently expressed responses, demonstrating consistent use of correct terminology♦ is clear and well-structured throughout, with language and terminology used of a consistently high standard in terms of level, accuracy, and technical content♦ consolidates and integrates required knowledge and skills, linking concepts and ideas, and relating answers explicitly to the question♦ provides evidence of possible alternative approaches and arguments as well as understanding of different interpretations♦ convincingly argues and shows links between discussions and conclusions, demonstrating comprehensive knowledge and understanding as well as analysis and evaluation skills	<p>Is a co-ordinated piece of work or exam script which:</p> <ul style="list-style-type: none">♦ interprets and understands the question in a way that enables the learner to meet the basic criteria required♦ demonstrates limited analysis, evaluation, and explanation of the question and other relevant information♦ offers uneven responses that convey limited understanding although some relevant points are made♦ is satisfactorily structured, with language and terminology used adequate, although not always consistent, in terms of level, accuracy, and technical content♦ consolidates and integrates knowledge and skills but may lack continuity and consistency and fail to show clear links to concepts and ideas♦ is likely to show only one approach and limited understanding of different interpretations♦ argues and justifies conclusions in an acceptable way but these conclusions may lack reasoned understanding, may not link well to discussions, and may show limited knowledge

Higher National Examination-based Graded Unit Specification: Designing the examination and assessing learners (cont)

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The marks achieved by the learner in the examination should be aggregated to arrive at an overall mark for the examination. Assessors will then assign an overall grade to the learner for this graded unit based on the following grade boundaries.

A	=	70%–100%
B	=	60%–69%
C	=	50%–59%

These grade boundaries are fixed and should **not** be amended.

If a learner does not achieve a pass or wishes to upgrade, then this must be done using a substantially different examination. In these circumstances, the highest grade achieved should be awarded.

More information on reasonable assistance, remediation and re-assessment may be found in the SQA publication *Guidance for the Implementation of Graded Units in Higher National Certificates and Diplomas* (SQA, 2008, Publication code: CA4405).



Higher National Examination-based Graded Unit Support Notes

Graded unit title: Cyber Security: Graded Unit 1 (SCQF level 7)

Guidance on approaches to delivery and assessment of this graded unit

The unit should be delivered and assessed toward the latter part of the course programme to enable learners to have completed, or be in the process of completing, the four units recommended prior to undertaking the graded unit.

It is important for a centre to ensure that arrangements made for sitting the first attempt at the graded unit exam, and any subsequent resit opportunities, are consistent with internal and external verification requirements. It is strongly recommended that a centre utilise the appropriate SQA exemplar material and prior moderation procedures that exist, to support the validity and reliability of internally-devised instruments of assessment.

Opportunities for developing Core and other essential skills

This unit has the Core Skill of *Problem Solving* embedded in it, so when learners achieve this unit their Core Skills profile will be updated to show that they have achieved *Problem Solving* at SCQF level 6.

History of changes to graded unit

Version	Description of change	Date
02	Core Skill Problem Solving at SCQF level 6 embedded.	31/08/18

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General information for learners

Graded Unit title: Cyber Security: Graded Unit 1(SCQF level 7)

The graded unit is the only unit in your award that is graded; all other units are simply assessed on a pass/fail basis. You must achieve at least 50% to be awarded a pass. The grading is carried out as follows:

A	=	70%–100%
B	=	60%–69%
C	=	50%–59%

The assessment is a written examination lasting three hours. All questions in the examination are **compulsory**.

The examination will be taken under supervised conditions. You are not permitted to bring any reference material into the examination room. Calculators are not permitted.

The question paper consists of three sections. Each section uses different types of questions and assesses different knowledge and skills.

The examination will be based upon the content of the following units, which are mandatory units within the HNC award:

- ♦ J0H9 34 *Data Security* (SCQF level 7)
- ♦ J0HL 34 *Digital Forensics* (SCQF level 7)
- ♦ J0HK 34 *Ethical Hacking* (SCQF level 7)
- ♦ J0HJ 34 *Computer Networking: Concepts, Practice and Introduction to Security* (SCQF level 7)

It is important, therefore, that you are familiar with the content of these units.

Section 1

This section is worth 20% of the total marks and consists of 20 multiple choice or multiple response questions, each question worth one mark. There are five questions covering key topics from each of the units listed above.

Section 2

This section is worth 20% of the total marks and consists of one constructed response integrated question covering key topics from two or more of the units listed above.

Section 3

This section is worth 60% of the total marks and consists of four constructed response questions, which you must answer. Each question is worth 15 marks, covering key topics from the individual units listed above.

This unit has the Core Skill of *Problem Solving* embedded in it, so when you achieve this unit your Core Skills profile will be updated to show that you have achieved *Problem Solving* at SCQF level 6.