

BCS Level 4 Award in Security Principles Syllabus 603/3255/4

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This is a United Kingdom government regulated qualification which is administered and approved by one or more of the following: Ofqual, Qualification in Wales, CCEA or SQA.

BCS Level 4 Award in Security Principles Syllabus

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Change History

Any changes made to the syllabus shall be clearly documented with a change history log. This shall include the latest version number, date of the amendment and changes made. The purpose is to identify quickly what changes have been made.

Version Number	Changes Made
V1.0 May 2018	Document created.

Introduction

This award is the second module of four knowledge modules that are applicable to the level 4 Unified Communications Trouble Shooter apprenticeship. It covers the range of concepts, approaches and techniques that are applicable to security principles, for which apprentices are required to demonstrate their knowledge and understanding.

Objectives

Apprentices should be able to demonstrate an understanding of modern computer security principles. Key areas are:

1. Understanding of different platforms and operating systems.
2. Understands Secure Communications Interfaces including VPN.
3. Understands encryption and auditing principles including cryptography.
4. Understands known security threats, how to rectify using the appropriate tools and how to prevent further threats.

Evidence of lessons learnt in these key areas should be collected and reflected upon when the apprentice is compiling the summative portfolio as the apprentice could identify how the task might be done better / differently with knowledge subsequently gained.

Target Audience

This award is relevant to anyone enrolled on the Level 4 Unified Communications Trouble Shooter Apprenticeship programme.

Course Format and Duration

Apprentices can study for this award by attending a training course provided by a BCS accredited Training Provider. The estimated total qualification time for this award is 83 hours.

Eligibility for the Examination

Individual employers will set the selection criteria, but this is likely to include 5 GCSEs (especially English, mathematics and a science or technology subject); other relevant qualifications and experience; or an aptitude test with a focus on IT skills.

Level 2 English and Maths will need to be achieved, if not already, prior to taking the endpoint assessment.

Duration and Format of the Examination

The format for the examination is a 30-minute multiple-choice examination consisting of 20 questions. The examination is closed book (no materials can be taken into the examination room). The pass mark is 13/20 (65%).

Additional Time for Apprentices Requiring Reasonable Adjustments Due to a Disability

Apprentices may request additional time if they require reasonable adjustments. Please refer to the [Access to Assessment policy](#) for detailed information on how and when to apply.

Additional Time for Apprentices Whose Language Is Not the Language of the Exam

If the examination is taken in a language that is not the apprentice's native / official language, then they are entitled to 25% extra time.

If the examination is taken in a language that is not the apprentice's native / official language, then they are entitled to use their own **paper** language dictionary (whose purpose is translation between the examination language and another national language) during the examination. Electronic versions of dictionaries will **not** be allowed into the examination room.

Guidelines for Training Providers

Each major subject heading in this syllabus is assigned an allocated time. The purpose of this is two-fold: first, to give both guidance on the relative proportion of time to be allocated to each section of an accredited course and an approximate minimum time for the teaching of each section; second, to guide the proportion of questions in the exam. Training providers may spend more time than is indicated and apprentices may spend more time again in reading and research. Courses do not have to follow the same order as the syllabus. Courses may be run as a single module or broken down into two or three smaller modules.

This syllabus is structured into sections relating to major subject headings and numbered with a single digit section number. Each section is allocated a minimum contact time for presentation. Apprentices should be encouraged to consider their summative portfolio throughout the modules.

Syllabus

For each top-level area of the syllabus a percentage and K level is identified. The percentage is the exam coverage of that area, and the K level identifies the maximum level of knowledge that may be examined for that area.

1 Security Principles (100%, K2)

In this topic area, the apprentice will describe and explain security principles including software, access (such as VPN), encryption and auditing. The successful apprentice should be able to:

1.1 Describe and explain the different platforms and operating systems.

- Linux;
- Google Android;
- iOS;
- macOS;
- Microsoft Windows.

1.2 Recognise secure communications interfaces.

- virtual private network (VPN);
- short messaging service (SMS);
 - characteristics;
 - limitations;
- VoIP;
- 4G;
- wireless.

1.3 Describe and explain encryption and auditing principles.

- authentication;
- authorization;
- encryption;
- auditing;
- cryptography.

1.4 Identify the appropriate tools to rectify known security threats.

- virus;
- worm;
- Trojan horse;
- spyware;
- adware;
- ransomware;
- logic bomb;
- rootkits;
- botnets;
- spoofing;
- social engineering;
- privilege escalation.

1.5 Identify how to prevent future threats from known security threats.

- personal;
- physical.

Levels of Knowledge / SFIA Levels

This syllabus will provide apprentices with the levels of difficulty / knowledge skill highlighted within the following table, enabling them to develop the skills to operate at the levels of responsibility indicated. The levels of knowledge and SFIA levels are explained on the website www.bcs.org/levels. The levels of knowledge above will enable apprentices to develop the following levels of skill to be able to operate at the following levels of responsibility (as defined within the SFIA framework) within their workplace:

Level	Levels of Knowledge	Levels of Skill and Responsibility (SFIA)
K7		Set strategy, inspire and mobilise
K6	Evaluate	Initiate and influence
K5	Synthesise	Ensure and advise
K4	Analyse	Enable
K3	Apply	Apply
K2	Understand	Assist
K1	Remember	Follow

Question Weighting

Syllabus Area	Target Number of Questions
1. Security Principles	20
Total	20 Questions

Format of Examination

Type	20 Question Multiple Choice.
Duration	30 minutes. An additional 25% will be allowed for apprentices sitting the examination in a language that is not their native / mother tongue.
Pre-requisites	Training from a BCS accredited training provider is strongly recommended but is not a pre-requisite.
Supervised	Yes.
Open Book	No.
Pass Mark	13/20 (65%).
Calculators	Calculators cannot be used during this examination.
Total Qualification Time (TQT)	83 Hours, 52.5 GLH recommended.
Delivery	Online.

Trainer Criteria

Criteria	<ul style="list-style-type: none"> ▪ Have 10 days' training experience or have a Train the Trainer qualification. ▪ Have a minimum of 3 years' practical experience in the subject area.
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Classroom Size

Trainer to apprentice ratio	1:16
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