

BCS Level 3 Award in Mobile and Operating Systems Syllabus QAN 603/0134/X

**Version 2.0
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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 3 Award in Mobile and Operating Systems

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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
Version 1.0 July 2016	Syllabus Created
Version 1.1 December 2016	Trainer criteria amended.
Version 1.2 December 2016	Compliance statement added.
Version 1.3 January 2017	The following sections of the syllabus have been expanded to include greater detail and clarity. <ul style="list-style-type: none">• Section 1 – Operating systems overview has now has examples of operating systems and platforms and widely used standards and best practice frameworks for developing secure digital systems.• Section 2 – Mobile devices overview now been extended to give examples of the commonly used approaches in the deployment, secure integration and remote operations of mobile devices.
Version 2.0 September 2017	Major amendments following full review and changed TQT.

Introduction

This award is the second module of the five knowledge modules required for the Level 3 Infrastructure Technician Apprenticeship. It covers the range of concepts, approaches and techniques that are applicable to mobile and operating systems, for which apprentices are required to demonstrate their knowledge and understanding.

Objectives

Apprentices should be able to demonstrate knowledge and understanding of current operating systems and mobile devices. Key areas are:

1. Understanding the similarities, differences and benefits of the current operating systems available.
2. Understanding how to operate remotely and how to deploy and securely integrate mobile devices.

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

The award is relevant to anyone enrolled on the Level 3 Infrastructure Technician Apprenticeship programme.

Course Format and Duration

Candidates 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 77.5 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.

Format and Duration of the Examination

The format for the examination is a 1-hour multiple-choice examination consisting of 40 questions. The examination is closed book (no materials can be taken into the examination room). The pass mark is 26/40 (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 [reasonable adjustments policy](#) for detailed information on how and when to apply.

Additional Time for Apprentices Whose Language is Not the Language of the Examination

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 Operating System Software and Configuration (40%, K2)

In this topic, the apprentice will gain an understanding and working knowledge of current operating systems. The successful apprentice should be able to:

- 1.1 Describe different operating system platforms.
 - Windows Server;
 - Windows Desktop;
 - Linux servers;
 - Android;
 - Apple iOS.

- 1.2 List and order the basic process of building a PC.
 - component selection;
 - order of component assembly;
 - environment precautions.

- 1.3 Describe the process for installing a software operating system.
 - obtaining installation media;
 - identifying suitable hardware;
 - installing software;
 - configuring for first use.

- 1.4 List and describe the order of tasks required for end-to-end testing of an operating system to ensure it works as intended (Windows, Linux).
 - perform a log in as an administrative user;
 - test remote management;
 - perform a log in as a normal user;
 - verify that a normal user cannot use admin tools requiring elevated permissions;
 - verify that connectivity to network resources and internet services works correctly.

1.5 Summarise the native applications for different operating systems.

- IOS
 - Safari;
 - Maps;
 - App Store;
- Windows;
 - IE;
 - Edge;
 - Notepad;
 - Paint;
 - Command Prompt;
- Linux;
 - Nano;
 - Terminal;
- Android;
 - Chrome;
 - Maps;
 - Play Store.

1.6 Explain the security principles when running an operating system running on a platform; with a focus on physical hardware, virtual servers and cloud services.

- secure configuration following recommended good practice;
- user access control;
- malware protection;
- patch management.

2 Remote Systems Management (60%, K2)

In this topic area, the apprentice will understand the importance of disaster recovery, how a disaster recovery plan works and their role within it. The successful apprentice should be able to:

2.1 Describe the top-level tasks required to deploy a VPN.

- configure VPN client settings;
- receive IP;
- configure WAN link;
- connect to remote server;
- encrypt traffic.

2.2 Describe how HTTPS provides secure access to web applications.

2.3 Describe how VOIP provides voice communication over IP.

- 2.4 Describe how using encryption technologies can securely transport data across mobile or wireless networks.
- HTTPS;
 - VPN technologies;
 - wireless.
- 2.5 Describe the key features of mobility.
- bring your own device;
 - extends the corporate network to mobile devices;
 - extends the implementation and enforcement of organisational security policies.
- 2.6 Explain how tools can be used to remotely manage devices or provide assistance to remote users.
- Remote Desktop / Remote Assistance;
 - Secure Shell.
- 2.7 Describe how each item in the list would help secure a mobile device.
- device encryption;
 - strong device passwords / biometric checks;
 - transport encryption such as HTTPS / VPN.
- 2.8 Explain the top-level configuration required for:
- connections that support secure remotely LAN access;
 - https;
 - VPN;
 - mobility options supported by mobile device management software;
 - remote wipe;
 - system / software updates;
 - phone tracking;
 - data encryption;
 - security policy enforcement;
 - security of mobile devices;
 - mobile security policy enforcement;
 - encryption at rest and in transit (on the wire).
- 2.9 Identify the benefits of device encryption and a strong passcode on a user's mobile device.
- if a device is lost or stolen, the data is encrypted;
 - a strong passcode to help prevent unauthorised access to data.

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. Operating System Software and Configuration	16
2. Remote Systems Management	24
Total	40 Questions

Format of Examination

Type	40 Question Multiple Choice.
Duration	1 hour. An additional 15 minutes 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	26/40 (65%).
Calculators	Calculators cannot be used during this examination.
Total Qualification Time (TQT)	77.5 Hours, 51 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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