QUALIFICATION GUIDE

Higher Education Qualifications
BCS Level 4 Certificate in IT (QAN: 100/6181/2)

bcs
The Chartered Institute for IT

v1.0

CONTENTS

INTRODUCTION

Encompassing three core modules, the Level 4 Certificate in IT explores the fundamentals of computer and network technology, processor architecture, operating and information systems, software development, and networks.

Candidates will gain a solid foundation upon which they will be able to build a career pathway into information technology. Career opportunities include entry-level positions in the rapidly growing fields of computer science and software development.

Upon successful completion of this qualification, candidates will be equipped with the knowledge and understanding to enable them to progress on to a broad range of further development areas such as Big Data management, software engineering and web application development. Candidates will be prepared to progress onto the BCS Level 5 Diploma in IT, with the ability to customise their learning pathways based on their areas of special interest.

BCS, The Chartered Institute for IT

As the Chartered Institute for IT we are the digital specialists and the only awarding body focussed on computing and IT. Our commitment under our royal charter is to ensure everyone within society, has access to the basic skills required to live and work in a digital age.

QUALIFICATION SUITABILITY AND OVERVIEW

There are no specific entrance requirements for the Certificate in IT. However, each Centre will apply some criteria to assess student competency and ability in completing the Certificate level. Exemption applications can only be for one unit out of the total number of three mandatory units of this course.

Candidates can study for this certificate by attending a training course provided by a BCS accredited Training Provider or through self-study, although it is strongly recommended that all candidates register with an approved centre. Studying with an approved centre will deliver significant benefits.

Candidates are required to become a member of BCS, The Chartered Institute for IT, to sit and be awarded the qualifications. Candidates may apply for a four-year student membership that will support them throughout their studies.

The Level 4 Certificate is suitable for candidates new to the profession who are keen to develop industry-relevant skills and knowledge, as well as professionals wishing to gain a formal IT qualification.

BCS LEVEL 4 CERTIFICATE IN IT	
QAN	100/6181/2
Entry Requirements	N/A
Credits	73
Guided Learning Hours (GLH)	600
Total Qualification Time (TQT)	734
Assessment Method	Written examination: in Section A, candidates choose two questions from a choice of four, each with 30 marks; in Section B, candidates choose five questions from a choice of eight, each with 12 marks.
Outcome	Pass/Fail

*See FAQs section for definitions of GLH and TQT.

MODULE TITLE	UNIT CODE	GLH	ASSESSMENT METHOD
Information Systems	Y/503/6232	200	Written examination
Software Development	D/503/6233	200	Written examination
Computer and Network Technology	H/503/6234	200	Written examination

N. B. All three mandatory units need to be passed to gain the qualification.

STRUCTURE OF THE QUALIFICATION

BCS HEQ is a three-stage UK undergraduate degree equivalent program of learning aimed at students with more limited IT knowledge, qualifications and professional experience to allow them to progress up to higher levels of knowledge and competency. HEQ is mapped into the BCS SFIAplus4 skills framework. HEQ is also one way of gaining entry to higher levels of BCS membership.

The objectives of HEQ are:
• To increase levels of competency and knowledge up to degree level
• To provide access to a Master's qualification at a partner university
• To provide a route to BCS membership

LEARNER PROGRESSION

Successful completion of the BCS HEQ Level 4 Certificate in IT will qualify for entry to the Level 5 Diploma in IT.

MODULES

All 3 mandatory units need to be passed to gain the qualification.

INFORMATION SYSTEMS	
1 Data Management	
	Explain the nature of information.
	Describe simple statistical measures.
	Explain requirements analysis.
	Describe database design issues.
	Demonstrate understanding of multimedia and hypermedia.
2 Systems analysis and design	
	Explain the systems development life-cycle.
	Describe prototyping and system development tools.
	Explain structured systems analysis and design.
	Analyse human computer interaction design.
3 Organisations	
	Explain the flow of information in an organisation.
	Describe personnel and social considerations.
	Describe quality assurance aspects.
	Explain the advances in technology and impact of emerging trends in IS.

SOFTWARE DEVELOPMENT	
1 Fundamental concepts of the Programming Process	
	Explain the concept of an algorithm.
	Design algorithms.
	Develop code from an algorithm.
	Utilise pseudocode and flowcharts.
2 Phase Specific issues of Software Development	
	Describe different approaches to software construction.
	Describe the objectives and principles of testing, derive test cases from a given specification.
	Discuss the need for software documentation and the nature of software documentation in a given context.
	Describe mechanisms for assuring software quality and security within the software development process.
	Discuss a range of new or emerging software technologies.
3 Introduction to Programming concepts	
	Discuss the use of data types and type checking in programming languages.
	Discuss the use of callable units in the development of code and write code examples which use callable units.
	Explain the concept of a data structure and illustrate the explanation with reference to commonly used data structures.
	Compare and contrast a variety of sorting and searching algorithms.
4 Files	
	Describe techniques for storing data in secondary storage.
5 Intro to concept of user interface design	
	Discuss aspects of user interface design.
6 Role and need for system software	
	Discuss the nature and the utility of system software.
7 Case studies in problem solving/algorithm analysis	
	Develop a software solution to a real-world problem.

COMPUTER AND NETWORK TECHNOLOGY	
1 Fundamentals	
	Demonstrate and apply representation of decimal integers within computer systems.
	Explain and design a system that uses a variety of logic gates.
	Demonstrate and apply sequential logic elements.
2 Processor Architecture	
	Explain different types of computer systems.
	Describe the concept of a stored program.
	Explain different instruction formats.
	Describe trends in processor technology.
	Explain the characteristics and performance of peripherals.
3 Introduction to operating systems and system software	
	Understand Human Computer Interaction.
	Explain the concept of multitasking.
	Demonstrate understanding of system performance.
4 Networks	
	Describe communication principles.
	Explain different protocols used for data transmission.
	Describe different network communication equipment.
	Explain security risks on computer networks and their impact.
	Explain advances in communication technology.

RESOURCES

Resources for both centres and self-study students are available on the BCS website.

AVAILABLE RESOURCES

Past assessment papers

On our website, you will find past exam papers for every module to aid revision.

Examiners' reports of past assessments

On our website, you will find exam reports for every module to aid revision.

You can also find the following support materials on the BCS website:

- Regulations
- General Guidance Notes
- Guidance Notes for the Professional Project in IT
- Submission Guidance for the Professional Project in IT
- Guidance notes for Authenticators
- A list of examination venues in the UK
- A list of examination venues overseas
- Candidate venue instructions
- Examination techniques
- Timetable of examinations

ASSESSMENT

The assessment for the BCS Level 4 Certificate in IT is a two-hour written examination for each of the three compulsory modules. Examinations are taken under exam conditions. Candidates will choose two questions from a choice of four in Section A, each with 30 marks; in Section B, candidates will choose five questions from a choice of eight, each with 12 marks.

The pass mark for each of the compulsory modules is 40%.

REASONABLE ADJUSTMENTS

BCS seeks to provide equal Access to Assessment for all students, ensuring that there are no unnecessary barriers to assessment and that any reasonable adjustments for students preserve the validity, reliability and integrity of the qualification.

All assessment will be through the medium of English and consideration will be given to requests from BCS approved Centre's for reasonable adjustments to be approved for a student. The decision will be based on the individual needs of the student as assessed by suitably qualified professionals. In promoting this policy, BCS aims to ensure that any student is not disadvantaged in relation to other students and their award accurately reflects their attainment.

For further information about our access to assessment policy can be found on the BCS website.

EXEMPTIONS

All students are eligible for exemptions. Normally a student will start at Certificate level and progress through each level in succession. However, in some circumstances exemptions are offered that allow students to omit certain units (up to 50% of the total number of units) with exception of the Professional Project at Level 5 and Level 6.

There are several vocational and professional qualifications that may enable students to gain entry at a higher point in the HEQ program, or to gain automatic exemptions in specific units. BCS allows two routes to exemption for HEQ:
• Accreditation of Prior Learning (APL)
• Individual Exemption

A list of qualifications approved under the APL scheme is maintained by BCS and is available on request. The qualifications included in the APL list have been subject to a detailed review and approved by the BCS to ensure that the qualifications are at a suitable level and contain suitable content for exemption to be granted.

Exemption will be granted only based on the qualifications approved, if the qualification has been completed, passed and sufficient and appropriate evidence has been supplied to BCS.

In certain circumstances BCS may grant individual exemptions based on other qualifications and experience not listed in the APL scheme. An individual exemption is granted solely at the discretion of BCS on a case by case basis.

LEARNING DELIVERY

HEQ IT qualifications are delivered through approved Centres and through self-study.
There are two levels of approved Centres, Approved and Accredited. Details of both Approved Centres and Accredited Centres can be found on the BCS website.

APPROVED PROVIDER

A course provider becomes an approved provider (Centre) when a successful review has been completed by BCS. At this level, BCS is concerned only with the course provider's ability to deliver the course satisfactorily, based on documentary evidence.

An approved Centre may only be approved to deliver certain level and units based on their choice and their ability to do so.

ACCREDITED PROVIDER

An Accredited Provider (Centre) is one that has undergone further scrutiny to review teaching methods, course structure and soundness of the business.

SELF STUDY

All students have the option to take HEQ Examinations based on a course of self-study. Limited support is available from BCS for students undertaking this method of learning.

COURSE MATERIAL

Course Material is supplied by the Centre. The syllabus and a unit description with a recommended reading list are provided on the BCS website. Much of the reading material is available directly from the BCS book supply service.

Past examination papers with model answers and examiners comments are available to student members and Course Providers.

APPEALS

If situations arise that call into question the validity of an awarding decision, for example, via an appeal or an enquiry in accordance with our Appeals Policy, or an error has been made and a learner has incorrectly been awarded, or not awarded, a qualification achievement issue will be brought to the attention of the Service Delivery Manager.

Appeals by learners are also dealt with by the Service Delivery Manager who will then be responsible for amending the relevant learner's record (and/or the records of groups of learners if the investigation indicates the issue affects more than one learner) to reflect the new award or indicate that an earlier award has been withdrawn/amended.

The Service Delivery Manager is also responsible for altering marks/awards if it is found there were an error and/or material inconsistency in the assessment's arrangements assigned to a question, test, or qualification.

The Service Delivery Manager will then be responsible for ensuring that the relevant learner(s) and centre(s) are informed of the revised awarding decision and the decision to revoke the certificates (if they have been issued already) in accordance with our stated Appeals and/or Malpractice and Maladministration Policies.

BCS will then carry out, as stated in our Appeals policy, a review across other learners/centres to see if they too were affected by the same original decision/error.

FREQUENTLY ASKED QUESTIONS

Q) When are exams held?

A) The examinations are held twice a year and are undertaken in normal examination conditions with one or more duly appointed invigilators. Exam Centre locations are not fixed and are at the discretion of BCS. BCS will endeavour to locate examinations at standard examination centres. A list of standard examination centres in the UK and overseas is available on the BCS website. Occasionally it may be necessary to book a special exam venue; in this case, a surcharge will be payable to BCS. Find out more about registering to take an HEQ exam on the BCS website.

Q) What is GLH and TQT?

A) Guided Learning Hours (GLH) indicates the approximate time (in hours) that the learner will be supervised during any teaching, learning or assessment activities.

Total Qualification Time (TQT) is a predication of the total time a learner with no prior knowledge might need to complete the course.

TQT is made up of two elements: GLH, and all other hours (an estimate of the number of hours a learner will reasonably spend on any unsupervised learning or assessment activities including homework, research, exam preparation and formal assessment) so that they can successfully achieve the qualification.

Q) What learning materials and courseware are available?

A) Past papers and examiners' reports are available on the BCS website for candidates to use. Browse our collection of past papers and exam reports for all modules, or visit the HEQ pages for more information on support materials.
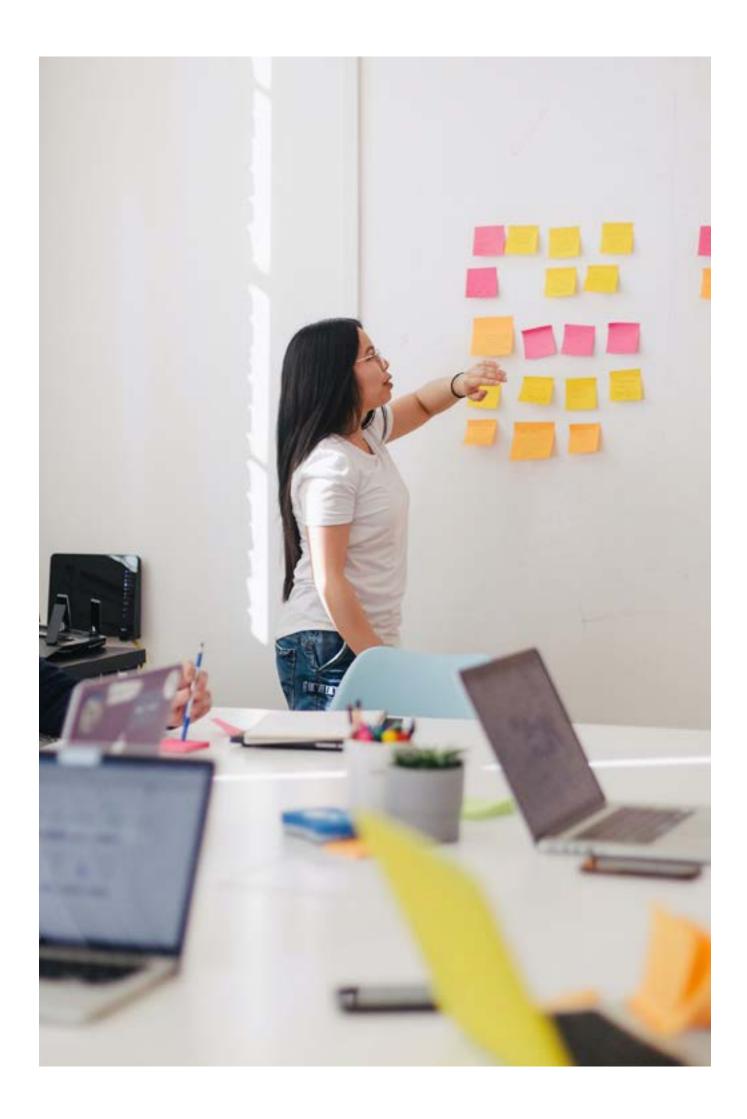
Q) Can HEQ be delivered remotely?

A) HEQ candidates can study for BCS Level 4 Certificate, Level 5 Diploma, or Level 6 Professional Graduate Diploma qualifications independently, as self-study candidates. BCS provides some support to self-study candidates.

Candidates can also register to study our qualifications with centres around the world. Learn more about finding an approved training centre on the BCS website.

GLOSSARY

BCS, The Chartered Institute for IT	The organisation has several levels of membership. It represents the IT profession as a group to Government and other institutions. It promotes professionalism and continuous development to its membership.
Ofqual	The regulator of general and vocational qualifications in England and vocational qualifications in Northern Ireland. Responsible for maintaining standards, improving confidence and distributing information about qualifications and examinations.
Regulated Qualifications Framework (RQF)	The RQF helps students to make informed decisions about the qualifications they need. They can compare the levels of different qualifications and identify clear progression routes for their chosen career.
SFIAplus	A BCS proprietary extension of an industry initiative Skills Framework for the Information Age (SFIA), a model for describing and managing competencies for ICT professionals. The SFIA is maintained by the SFIA Foundation.
Tertiary and Vocational Education Commission (TVEC)	Part of Sri Lanka's Ministry of Skills Development and Vocational Training.

CONTACT

For any queries relating to this document or the delivery of HEQ, contact;
T: 01793 417445   **E**: bcssales@bcs.uk

For further information please contact:

BCS
The Chartered Institute for IT
3 Newbridge Square
Swindon
SN1 1BY

T +44 (0)1793 417 445

www.bcs.org

bcs
The Chartered Institute for IT