Acknowledgements and thanks

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Introduction

The teaching of Computing in schools has moved centre stage over the past few months.

On 13th January 2012, the Royal Society published the ‘Shut Down or Restart? report’, continuing a discussion on computing in schools begun in the earlier Livingstone Hope Next Gen report. Chaired by Professor Steve Furber, a fellow of both the Royal Academy of Engineering and the Royal Society, Shut Down or Restart? makes it clear that the current ICT curriculum in the English National Curriculum can encourage a pedestrian approach that overemphasizes mundane learning about tools such as word processors and does not do enough to promote the acquisition of the broader computing knowledge and rigorous engineering skills that would keep Britain at the forefront of a global digital economy.

In the same week, the Secretary of State for Education, Michael Gove, announced far-reaching changes to the ICT national curriculum including a proposal to withdraw the programme of study for ICT from the National Curriculum in England.

The Royal Academy of Engineering believes that every young person should have the opportunity to experience and learn real Computing from ages 5 to 19 in the same way that they experience Mathematics or Science. Computing is that important.

This guide, produced by the Royal Academy of Engineering in association with the BCS Academy of Computing, the Computing at School working group (CAS) and Next Gen Skills is designed to help schools make sense of the sometimes confusing landscape of computing qualifications.

In these pages, we have identified the Level 2 (GCSE and equivalent) qualifications that are publically funded for 14–16 year olds in England and which are included in the 2014 Key Stage 4 Performance Tables. We have then determined the broad purpose of each one by classifying the individual units in each qualification as:

- Digital Literacy
- Information Technology (IT)
- Computer Science

We believe that effective learning of all three is useful to young people – but they are different. Critically, we believe that only IT and Computer Science learning outcomes provide for progression in Computing. Therefore schools should think very carefully about the purpose of the Computing qualifications they offer at Key Stage 4 to ensure that they are appropriate for individual learners. The potential for synergy with other subjects taken, including the creative subjects such as Art and Design, should be taken into consideration.

This guide provides the detailed analysis of qualifications that are most likely to be popular with schools because they will count in school Performance Tables from 2014. They are not necessarily the most appropriate qualifications in every case and schools should take a wider view of the qualifications on offer if they do not find what they need in these pages. The Royal Academy of Engineering FE STEM Data project identified 40 Level 2 publically funded Computing qualifications being used in schools in England in 2009/10. There are also a number of vendor qualifications provided commercially. The right of individual schools to choose what is best for their learners is acknowledged and respected.
The qualifications

The qualifications considered

This guide focuses on Level 2 qualifications (those broadly equivalent to A*-C grades GCSE) because this is the level for a 16 year old that provides options for further progression in computing. There is a wider pool of Level 1 and Level 3 qualifications available to 14–16 year olds which is referenced above but not considered further here.

Referring to the Register of Regulated Qualifications and to the lists of compliant Level 2 qualifications published in March 2012 by the Department for Education for the case of computing qualifications this amounts to (not including Level 1 courses, IGCSEs or Level 3 courses):

- 8 qualifications that will count in the 2013 performance tables
- 27 qualifications that will count in the 2014 performance tables

Classification of Computing qualifications

The Shutdown or Re-start report into computing in schools published by the Royal Society in 2012 made a distinction between classes of computing qualifications. The classifications adopted were: digital literacy, IT and Computer Science.

“Digital literacy should be understood to mean the basic skill or ability to use a computer confidently, safely and effectively, including: the ability to use office software such as word processors, email and presentation software, the ability to create and edit images, audio and video, and the ability to use a web browser and internet search engines. These are the skills that teachers of other subjects at secondary school should be able to assume that their pupils have, as an analogue of being able to read and write”.

Source: Shutdown or Restart, The Royal Society, 2012

Whilst classification of qualifications that contain aspects of digital literacy is relatively straightforward, the definitions of IT and Computer Science are not so sharply defined. Therefore, the classifications used by the Computing at Schools group (which build on those of the Royal Society) have been used here.

The Royal Academy of Engineering believes that schools should distinguish between those computing qualifications offered to 14-16 year olds that are concerned with digital literacy and those that are concerned with IT or with Computer Science because qualifications principally concerned with digital literacy do not provide for progression in Computing.

<table>
<thead>
<tr>
<th>INFORMATION TECHNOLOGY</th>
<th>COMPUTER SCIENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>How computer systems are used</td>
<td>How computer systems work</td>
</tr>
<tr>
<td>People are central to the subject</td>
<td>Computation is central to the subject</td>
</tr>
<tr>
<td>Concerned with the development of IT systems, with particular emphasis on the effects on end users</td>
<td>Concerned with algorithmic thinking, and the ways in which a real-world problem can be decomposed in order to construct a working solution</td>
</tr>
<tr>
<td>Focuses on building a business/application solution mainly by using a combination of currently available software</td>
<td>Develops new systems by writing new software.</td>
</tr>
<tr>
<td>Emphasis on choosing and evaluating, appropriate software</td>
<td>Emphasis on principles and techniques for building new software (or hardware). Programming is a central technique.</td>
</tr>
<tr>
<td>Information Technology supports human activity</td>
<td>Computation is a ‘lens’ through which we can understand the natural world, and the nature of thought itself, in a new way.</td>
</tr>
<tr>
<td>Tending towards applied/vocational</td>
<td>Tending towards academic</td>
</tr>
</tbody>
</table>

Source: A curriculum framework for Computer Science and Information Technology, Computing at School, March 2012
The Royal Academy of Engineering has used the Royal Society and Computing at School definitions above to provide a classification of 27 computing qualifications principally according to the titles of the units in each qualification. In cases of ambiguity the individual assessment criteria stated for a unit have been inspected. The assessment criteria are frequently (but not always) listed for each unit on the Register of Regulated Qualifications website (http://register.ofqual.gov.uk).

The work is made more complex as many qualifications offer a mix of mandatory and optional units. It turns out that many are a mix of digital literacy, IT and Computer Science in both the mandatory and optional units.

Noting the complexities involved, using these definitions to classify according to unit title, the 27 qualifications can be classified as follows:

Of the 8 qualifications that will count in the 2013 performance tables (not including Level 1 courses, IGCSEs or Level 3 courses)

- 4 are a mix of IT and Digital Literacy
- 2 are devoted to Computer Science
- 1 is a mix of IT and Computer Science
- 1 is devoted to IT

All but one are standard GCSEs.

Of the 27 qualifications that will count the 2014 performance tables (not including Level 1 courses, IGCSEs or Level 3 courses)

- 11 are a mix of IT and Digital Literacy
- 10 are a mix of IT, Computer Science and (often) Digital Literacy
- 3 are devoted to Computer Science
- 2 are devoted to Digital Literacy
- 1 is devoted to IT

6 are GCSE qualifications. 5 include Computer Science. Most are a mix of IT and digital literacy.

The 27 qualifications are grouped according to size and classified according to the colour coding:

Digital literacy
IT
Computer Science

A detailed initial classification of individual units is given in Annex A.
Classification

Size of 1+ GCSE (15 qualifications)

AQA GCSE Computer Science
120 GLH
Mandatory units: Computer Science

AQA GCSE ICT
120 GLH
Mandatory units: IT and Digital Literacy

BCS Level 2 Certificate in IT User Skills (ITQ) (QCF) 500/6175/6
120 GLH
Mandatory units: IT
Optional units: IT and Digital Literacy

BCS Level 2 Certificate in IT User Skills (ECDL Extra) (ITQ) (QCF) 500/6242/6
120 GLH
Mandatory units: 1 IT and 3 Digital Literacy
Optional units: none

City & Guilds Level 2 Certificate for IT Users (ITQ) (QCF) 500/6724/2
120 GLH
Mandatory units: IT and Digital Literacy
Optional units: none

City & Guilds Level 2 Diploma for Software Developers 500/1729/9
120 GLH
Mandatory units: Computer Science
Optional units: Computer Science
Edexcel GCSE ICT single award
120 GLH
Mandatory units: IT and Digital Literacy

Edexcel Level 2 Certificate in Digital Applications for IT Users 100/5326/8
180 GLH
Mandatory units: Digital Literacy
Optional units: Digital Literacy and IT and Computer Science

IAM Level 2 Certificate in IT User Skills (ITQ) (QCF)* 501/1613/7
120 GLH
Mandatory units: IT
Optional units: IT and Digital Literacy

OCR Level 2 Certificate in IT User Skills (ITQ) (QCF) 500/6743/6
120 GLH
Mandatory units: IT
Optional units: IT and Digital Literacy

OCR Level 1/2 Cambridge National Certificate in ICT* 600/4776/8
120 GLH
Mandatory units: IT
Optional units: IT and Digital Literacy and Computer Science

OCR GCSE Computing - J275
120 GLH
Mandatory units: Computer Science

OCR GCSE ICT
120 GLH
Mandatory units: IT and Computer Science

TLM Level 2 Certificate in IT User Skills in Open Systems and Enterprise (ITQ) 500/8073/8
120 GLH
Mandatory units: IT
Optional units: IT and Digital Literacy

WJEC GCSE ICT (single award and short course)
120 GLH
Mandatory units: IT and Digital Literacy
Size of 2+ GCSEs (9 qualifications)

City & Guilds Level 2 Diploma in ICT Systems and Principles for IT Professionals (QCF) 501/1859/6
Product code 220 GLH
Mandatory units: IT
Optional units: IT and Digital Literacy and Computer Science

City & Guilds Level 2 Diploma for IT Users (ITQ) (QCF) 500/6760/6
275 GLH
Mandatory units: IT
Optional units: IT and Digital Literacy

Edexcel BTEC Level 2 Extended Certificate in IT (QCF) 500/9550/X
180 GLH
Mandatory units: IT
Optional units: IT and Digital Literacy and Computer Science

Edexcel Level 2 Certificate in Digital Applications for IT Users 100/5326/8
180 GLH
Mandatory units: IT
Optional units: IT and Digital Literacy and Computer Science

Edexcel GCSE ICT double award
240 GLH
Mandatory units: IT and Digital Literacy

Edexcel Level 2 Extended Certificate in Digital Applications for IT Users 100/6442/4
270 GLH
Mandatory units: Digital Literacy
Optional units: Digital Literacy IT and Computer Science

OCR Level 2 Certificate for Creative iMedia (QCF) 500/8529/3
180 GLH
Mandatory units: Digital Literacy
Optional units: Digital Literacy

OCR Level 2 Diploma for Creative iMedia (QCF) 500/8531/1
285 GLH
Mandatory units: Digital Literacy
Optional units: Digital Literacy

OCR Level 1/2 Cambridge National Diploma in ICT* 600/4778/1
240 GLH
Mandatory units: IT
Optional units: IT and Digital Literacy and Computer Science

Size of 3+ GCSEs (2 qualifications)

Edexcel BTEC Level 2 Diploma in IT (QCF) 500/9552/3
360 GLH
Mandatory units: IT
Optional units: IT and Computer Science

Edexcel Level 2 Diploma in Digital Applications for IT Users 100/5327/X
360 GLH
Mandatory units: Digital Literacy
Optional units: Digital Literacy IT and Computer Science

Size of 4+ GCSEs (1 qualification)

Level 2 Principal Learning in IT
420 GLH
Mandatory units: IT
Optional units: none
Annex A: Detailed analysis of qualification units

Level 2 Principal Learning in IT
420 GLH
This qualification has seven units, all of which are mandatory
- The potential of technology | F/500/9462 | Level 2
- Exploring organisations | Y/500/9466 | Level 2
- Effective communication | H/500/9468 | Level 2
- Skills for innovation | M/500/9473 | Level 2
- Technology systems | T/500/9474 | Level 2
- Multimedia | F/500/9476 | Level 2
- Managing projects | L/500/9478 | Level 2

BCS Level 2 Certificate in IT User Skills (ECDL Extra) (ITQ) (QCF) 500/6242/6
120 GLH Mandatory units
- Improving Productivity using IT
- Presentation Software
- Spreadsheet Software
- Word Processing Software

BCS Level 2 Certificate in IT User Skills (ITQ) (QCF) 500/6175/6
110-125 GLH Mandatory Units
- Improving Productivity using IT

Optional units
This qualification is made up of a minimum of 16 credits, with at least half of optional credit coming from Level 2 (or level 3) units. The units to choose from are:
- Audio Software
- Bespoke Software
- Computerised Accounting Software
- Data Management Software
- Database Software
- Design Software
- Desktop Publishing Software
- Drawing and Planning Software
- Imaging Software
- IT Communication Fundamentals
- IT Software Fundamentals
- IT User Fundamentals
- Multimedia Software
- Optimise IT System Performance
- Personal Information Management Software
- Presentation Software
- Project Management Software
- Security for IT Users
- Set up an IT System
- Specialist Software
- Spreadsheet Software
- Using Collaborative Technologies
- Using email and the Internet **
- Using Mobile IT Devices
- Video Software
- Website Software
- Word Processing Software

City & Guilds Level 2 Certificate for IT Users (ITQ) (QCF) 500/6724/2
120 GLH
Product 7574 – To achieve the Certificate (QCA reference: 500/6724/2) learners must complete the relevant mandatory unit(s) and their choice of optional units to gain 16 credits or more.

City & Guilds Level 2 Diploma for IT Users (ITQ) (QCF) 500/6760/6
275 GLH
Product 7574 – To achieve the Diploma (QCA reference: 500/6760/6) learners must complete the relevant mandatory unit(s) and their choice of optional units to gain 38 credits or more. (See table opposite)

Mix of IT and digital literacy
<table>
<thead>
<tr>
<th>ACCREDITATION UNIT REFERENCE</th>
<th>CITY &amp; GUILDS UNIT NUMBER</th>
<th>UNIT TITLE</th>
<th>MANDATORY/OPTIONAL FOR FULL QUALIFICATION</th>
<th>CREDIT VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>J/502/4156</td>
<td>201</td>
<td>Improving Productivity using IT</td>
<td>Mandatory</td>
<td>4</td>
</tr>
<tr>
<td>M/503/0498</td>
<td>234</td>
<td>Understanding the Potential of IT</td>
<td>Mandatory (IT User Skills – Apprenticeship Pathway only)</td>
<td>8</td>
</tr>
<tr>
<td>T/503/0499</td>
<td>235</td>
<td>Developing personal and team effectiveness using IT</td>
<td>Mandatory (IT User Skills – Apprenticeship Pathway only)</td>
<td>4</td>
</tr>
<tr>
<td>L/502/4207</td>
<td>202</td>
<td>IT User Fundamentals</td>
<td>Optional</td>
<td>3</td>
</tr>
<tr>
<td>L/502/4210</td>
<td>203</td>
<td>Set Up an IT System</td>
<td>Optional</td>
<td>4</td>
</tr>
<tr>
<td>H/502/4245</td>
<td>204</td>
<td>Optimise IT System Performance</td>
<td>Optional</td>
<td>4</td>
</tr>
<tr>
<td>Y/502/4257</td>
<td>205</td>
<td>IT Security for Users</td>
<td>Optional</td>
<td>2</td>
</tr>
<tr>
<td>D/502/4292</td>
<td>206</td>
<td>IT Communication Fundamentals</td>
<td>Optional</td>
<td>2</td>
</tr>
<tr>
<td>A/502/4297</td>
<td>207</td>
<td>Using the Internet</td>
<td>Optional</td>
<td>4</td>
</tr>
<tr>
<td>M/502/4300</td>
<td>208</td>
<td>Using Email</td>
<td>Optional</td>
<td>3</td>
</tr>
<tr>
<td>F/502/4379</td>
<td>209</td>
<td>Using Collaborative Technologies</td>
<td>Optional</td>
<td>4</td>
</tr>
<tr>
<td>K/502/4375</td>
<td>210</td>
<td>Using Mobile IT Devices</td>
<td>Optional</td>
<td>2</td>
</tr>
<tr>
<td>L/502/4370</td>
<td>211</td>
<td>Personal Information Management Software</td>
<td>Optional</td>
<td>2</td>
</tr>
<tr>
<td>R/502/4385</td>
<td>212</td>
<td>IT Software Fundamentals</td>
<td>Optional</td>
<td>3</td>
</tr>
<tr>
<td>D/502/4390</td>
<td>213</td>
<td>Audio Software</td>
<td>Optional</td>
<td>3</td>
</tr>
<tr>
<td>M/502/4393</td>
<td>214</td>
<td>Video Software</td>
<td>Optional</td>
<td>3</td>
</tr>
<tr>
<td>F/502/4396</td>
<td>215</td>
<td>Bespoke Software</td>
<td>Optional</td>
<td>3</td>
</tr>
<tr>
<td>R/502/4399</td>
<td>216</td>
<td>Specialist Software</td>
<td>Optional</td>
<td>3</td>
</tr>
<tr>
<td>J/502/4402</td>
<td>217</td>
<td>Computerised Accounting Software</td>
<td>Optional</td>
<td>3</td>
</tr>
<tr>
<td>J/502/4559</td>
<td>218</td>
<td>Data Management Software</td>
<td>Optional</td>
<td>3</td>
</tr>
<tr>
<td>M/502/4555</td>
<td>219</td>
<td>Database Software</td>
<td>Optional</td>
<td>4</td>
</tr>
<tr>
<td>T/502/4573</td>
<td>220</td>
<td>Design Software</td>
<td>Optional</td>
<td>4</td>
</tr>
<tr>
<td>L/502/4613</td>
<td>221</td>
<td>Imaging Software</td>
<td>Optional</td>
<td>4</td>
</tr>
<tr>
<td>D/502/4566</td>
<td>222</td>
<td>Desktop Publishing Software</td>
<td>Optional</td>
<td>4</td>
</tr>
<tr>
<td>A/502/4610</td>
<td>223</td>
<td>Drawing and Planning Software</td>
<td>Optional</td>
<td>3</td>
</tr>
<tr>
<td>D/502/4616</td>
<td>224</td>
<td>Multimedia Software</td>
<td>Optional</td>
<td>4</td>
</tr>
<tr>
<td>M/502/4622</td>
<td>225</td>
<td>Presentation Software</td>
<td>Optional</td>
<td>4</td>
</tr>
<tr>
<td>M/502/4619</td>
<td>226</td>
<td>Project Management Software</td>
<td>Optional</td>
<td>4</td>
</tr>
<tr>
<td>F/502/4625</td>
<td>227</td>
<td>Spreadsheet Software</td>
<td>Optional</td>
<td>4</td>
</tr>
<tr>
<td>R/502/4631</td>
<td>228</td>
<td>Website Software</td>
<td>Optional</td>
<td>4</td>
</tr>
<tr>
<td>R/502/4628</td>
<td>229</td>
<td>Word Processing Software</td>
<td>Optional</td>
<td>4</td>
</tr>
</tbody>
</table>
City & Guilds Level 2 Diploma for Software Developers 500/1729/9
120 GLH
Product code 7266–22
You complete 1 mandatory unit:
Create designs and test software components.
Plus 1 optional unit from:
- Designing and creating databases
- Designing and creating multi-page web sites
- Create software components using C++
- Create software components using COBOL
- Create software components using Java
- Create software components using C#
- Create software components using Visual Basic.net

City & Guilds Level 2 Diploma in ICT Systems and Principles for IT Professionals (QCF) 501/1859/6
Product code
220 GLH
Learners need to achieve a minimum of 37 credits. 9 credits from group A and a minimum of 22 credits from group L2. The remaining 6 credits can be taken from a combination of either groups L2 and/or L3. A maximum of 6 credits can be taken from group UU.

A (Mandatory unit)
Customer Support Provision 2 | T/601/8296 | Level 2 | 9

L2 (Level 2 units)
A2 (CompTIA level 2 units)
CompTIA A+ Practical Application | M/602/1388 | Level 2 | 10
CompTIA A+ Essentials | H/602/1386 | Level 2 | 10

C2 (Cisco Level 2 units)
Cisco IT Essentials Part 1 | L/601/7459 | Level 2 | 10
CG (City & Guilds level 2 units)
Fibre optic cabling in an internal environment QCF | K/501/3957 | Level 2 | 6
Fibre optic cabling in an external environment QCF | M/501/3958 | Level 2 | 5
Maintain equipment and systems | K/501/3960 | Level 2 | 9
Install and configure ICT equipment and operating systems | J/501/3979 | Level 2 | 9
Install, configure and maintain software | A/501/3980 | Level 2 | 5
Testing ICT Systems | J/501/3982 | Level 2 | 5
ICT Systems monitoring and operation QCF | R/501/3984 | Level 2 | 6

Level 2 | 6
ICT repair centre procedure 2 | Y/501/3985 | Level 2 | 5
Install, configure and test ICT Networks | H/501/3990 | Level 2 | 9
Create automated procedures for ICT operating systems | K/501/3991 | Level 2 | 9
Business Concepts 2 | A/502/1108 | Level 2 | 4
Copper Cabling in an internal environment | F/600/6815 | Level 2 | 6

M2 (Microsoft level 2 units)
Deploying and Maintaining Windows Vista Client and 2007 Microsoft Office System Desktops | A/502/3649 | Level 2 | 9
Microsoft Office Project 2007, Managing Projects | K/600/4394 | Level 2 | 6
Configuring Microsoft Windows Vista Client | J/502/3623 | Level 2 | 9
Supporting and Troubleshooting Applications on a Windows Vista Client for Consumer Support Technicians | K/502/3646 | Level 2 | 9
Supporting Users and Troubleshooting Desktop Applications on a Microsoft Windows XP Operating System | D/502/4065 | Level 2 | 9
Windows 7, Configuring | Y/601/6797 | Level 2 | 6
Windows 7, Enterprise Desktop Support Technician | D/601/6798 | Level 2 | 8
Supporting Users and Troubleshooting a Microsoft Windows XP Operating System | L/502/3798 | Level 2 | 9
MTA: Software Development Fundamentals | M/602/6347 | Level 2 | 10
MTA: Security Fundamentals | A/602/6349 | Level 2 | 10
MTA: Database Administration Fundamentals | A/602/6352 | Level 2 | 10
MTA: Web Development Fundamentals | F/602/6353 | Level 2 | 10
MTA: Networking Fundamentals | M/602/6350 | Level 2 | 10
MTA: Windows Development Fundamentals | T/602/6348 | Level 2 | 10
Windows Server Administration Fundamentals | T/602/6351 | Level 2 | 10

S2 (Shared L2 NOS units from e-skills UK)
Networking principles | T/601/3289 | Level 2 | 6
Data Representation and Manipulation for IT | D/601/3206 | Level 2 | 7
Telecommunications principles | J/601/3295 | Level 2 | 7
Software testing | J/601/3510 | Level 2 | 5
Principles of ICT system and data security | L/601/3508 |
Computer qualifications included in the 2014 Key Stage 4 Performance Tables: a guide for schools

<table>
<thead>
<tr>
<th>Level 2</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systems Architecture</td>
<td>M/601/3503</td>
</tr>
<tr>
<td>Web Fundamentals</td>
<td>R/601/3512</td>
</tr>
<tr>
<td>Creating an object oriented computer program</td>
<td>A/601/3181</td>
</tr>
<tr>
<td>Creating an event driven computer program</td>
<td>T/601/3177</td>
</tr>
<tr>
<td>Creating a procedural computer program</td>
<td>L/601/3167</td>
</tr>
</tbody>
</table>

**UU (IT User Units)**

| Units |
|---------------------------------|---|
| Using the Internet | A/502/4297 | Level 2 | 4 |
| Drawing and Planning Software | A/502/4610 | Level 2 | 3 |
| Spreadsheet Software | A/502/4624 | Level 1 | 3 |
| Desktop Publishing Software | D/502/4566 | Level 2 | 4 |
| Spreadsheet Software | F/502/4625 | Level 2 | 4 |
| Using Email | J/502/4299 | Level 1 | 2 |
| Drawing and Planning Software | J/502/4609 | Level 1 | 2 |
| Imaging Software | J/502/4612 | Level 1 | 3 |
| Presentation Software | K/502/4621 | Level 1 | 3 |
| Imaging Software | L/502/4613 | Level 2 | 4 |
| Word Processing Software | L/502/4627 | Level 1 | 3 |
| Using Email | M/502/4300 | Level 2 | 3 |
| Design Software | M/502/4572 | Level 1 | 3 |
| Presentation Software | M/502/4622 | Level 2 | 4 |
| Word Processing Software | R/502/4628 | Level 2 | 4 |
| Website Software | R/502/4631 | Level 2 | 4 |
| Using the Internet | T/502/4296 | Level 1 | 3 |
| Design Software | T/502/4573 | Level 2 | 4 |
| Desktop Publishing Software | Y/502/4565 | Level 1 | 3 |
| Website Software | L/502/4630 | Level 1 | 3 |
| Database Software | H/502/4555 | Level 1 | 3 |
| Database Software | M/502/4555 | Level 2 | 4 |
| Multimedia Software | D/502/4616 | Level 2 | 4 |
| Multimedia Software | Y/502/4615 | Level 1 | 3 |

**Edexcel BTEC Level 2 Extended Certificate in IT (QCF)**

| 500/9550/X |
| 180 GLH |

**Structure Requirements**

The Edexcel BTEC Level 2 Extended Certificate in IT consists of 2 mandatory units (10 credits) plus optional units that provide for a combined total of 30 credits and 180 guided learning hours (GLH) for the completed qualification. Up to 10 credits of Optional vendor units may count towards this total. This structure allows the flexibility to import standard BTEC units (QCF) at Levels 1, 2 or 3 to meet local needs. This is limited to a total of 7 credits and can not be at the expense of the mandatory units in this qualification.

**IT**

**CGM 0 (Compound Group Mandatory 0)**

**A (Mandatory Units)**

| Working in the IT industry | J/601/3202 | Level 2 | 5 |
| Communicating in the IT Industry | K/601/3192 | Level 2 | 5 |

**B (Optional Units)**

**B1 (Optional Units--A)**

| Computer Systems | H/601/3255 | Level 2 | 10 |
| Website Development | A/601/3245 | Level 2 | 10 |
| Project Planning using IT | A/601/3259 | Level 2 | 10 |
| Supporting Organisations with IT | A/601/3391 | Level 1 | 10 |
| IT Support | F/601/3277 | Level 2 | 10 |
| Home Entertainment Systems | F/601/3294 | Level 2 | 10 |
| Mobile Communications Technology | H/601/3398 | Level 2 | 10 |
| Installing Computer Software | J/601/3264 | Level 2 | 10 |
| IT-Fault Diagnosis and Remedy | K/601/3287 | Level 2 | 10 |
| Telecommunications Technology | K/601/3290 | Level 2 | 10 |
| Setting up an IT Network | M/601/3274 | Level 2 | 10 |
| Database Systems | R/601/3400 | Level 2 | 10 |
| Developing Computer Games | Y/601/3348 | Level 2 | 10 |
| Multimedia Design | L/601/3296 | Level 2 | 10 |
| Customising Software | M/601/3405 | Level 2 | 10 |
| Presenting Information Using IT | D/601/5828 | Level 2 | 10 |
| Procedural Programming | H/601/5099 | Level 2 | 10 |
| Computer Graphics | H/601/5801 | Level 2 | 10 |
| IT Security | J/601/4057 | Level 2 | 10 |
| Spreadsheet Modelling | K/601/5816 | Level 2 | 10 |
| Event driven Programming | L/601/5095 | Level 2 | 10 |
| Doing Business Online | Y/601/5083 | Level 2 | 10 |
| Mathematics for IT | Y/601/5794 | Level 2 | 10 |
### Business IT Skills
- **Object Oriented Programming**: K/601/5105 | Level 2 | 10
- **Software Design**: T/601/5110 | Level 2 | 10

### B2 (Optional Specialist Units)
- **Animation Techniques**: M/600/6521 | Level 2 | 10
- **Interactive Media Production**: Y/600/6514 | Level 2 | 10

### B3 (Optional Vendor Units)
- **Cisco IT Essentials Part 1**: L/601/7459 | Level 2 | 10
- **CompTIA A+ Practical Application**: M/602/1388 | Level 2 | 10
- **CompTIA A+ Essentials**: R/501/3595 | Level 2 | 9
- **Windows 7, Enterprise Desktop Support Technician**: D/601/6798 | Level 2 | 8
- **Windows 7, Configuring**: Y/601/6797 | Level 2 | 6

### Edexcel BTEC Level 2 Diploma in IT (QCF) 500/9552/3
- **360 GLH**

The Edexcel BTEC Level 2 Diploma in IT consists of 3 mandatory units (20 credits) plus optional units that provide for a combined total of 60 credits and 360 guided learning hours (GLH) for the completed qualification. Up to 20 credits of Optional vendor units may count towards this total. This structure allows the flexibility to import standard BTEC units (QCF) at Levels 1, 2 or 3 to meet local needs. This is limited to a total of 10 credits and can not be at the expense of the mandatory units in this qualification.

### IT

#### CGM 0 (CompoundGroup Mandatory 0)

**A (Mandatory Units)**
- **Working in the IT industry**: J/601/3202 | Level 2 | 5
- **Communicating in the IT Industry**: K/601/3192 | Level 2 | 5
- **Computer Systems**: H/601/3255 | Level 2 | 10

#### B (Optional Units)

**B1 (Optional Units—A)**
- **Website Development**: A/601/3245 | Level 2 | 10
- **Project Planning using IT**: A/601/3259 | Level 2 | 10
- **Supporting Organisations with IT**: A/601/3391 | Level 2 | 10
- **IT Support**: F/601/3277 | Level 2 | 10
- **Home Entertainment Systems**: F/601/3294 | Level 2 | 10
- **Mobile Communications Technology**: H/601/3398 | Level 2 | 10
- **Installing Computer Software**: J/601/3264 | Level 2 | 10
- **IT Fault Diagnosis and Remedy**: K/601/3287 | Level 2 | 10
- **Telecommunications Technology**: K/601/3290 | Level 2 | 10
- **Setting up an IT Network**: M/601/3274 | Level 2 | 10

**B2 (Optional Specialist Units)**
- **Animation Techniques**: M/600/6521 | Level 2 | 10
- **Interactive Media Production**: Y/600/6514 | Level 2 | 10

**B3 (Optional Vendor Units)**
- **Cisco IT Essentials Part 1**: L/601/7459 | Level 2 | 10
- **CompTIA A+ Practical Application**: M/602/1388 | Level 2 | 10
- **CompTIA A+ Essentials**: R/501/3595 | Level 2 | 9
- **Windows 7, Enterprise Desktop Support Technician**: D/601/6798 | Level 2 | 8
- **Windows 7, Configuring**: Y/601/6797 | Level 2 | 6

### Database Systems
- **Installing Computer Hardware**: T/601/3261 | Level 2 | 10
- **Developing Computer Games**: Y/601/3348 | Level 2 | 10
- **Multimedia Design**: L/601/3296 | Level 2 | 10
- **Customising Software**: M/601/3405 | Level 2 | 10
- **Presenting Information Using IT**: D/601/5828 | Level 2 | 10
- **Procedural Programming**: H/601/5099 | Level 2 | 10
- **Computer Graphics**: H/601/5801 | Level 2 | 10
- **IT Security**: J/601/4057 | Level 2 | 10
- **Spreadsheet Modelling**: K/601/5816 | Level 2 | 10
- **Event driven Programming**: L/601/5095 | Level 2 | 10
- **Doing Business Online**: Y/601/5083 | Level 2 | 10
- **Mathematics for IT**: Y/601/5794 | Level 2 | 10
- **Business IT Skills**: T/601/5012 | Level 2 | 10
- **Object Oriented Programming**: K/601/5105 | Level 2 | 10
- **Software Design**: T/601/5110 | Level 2 | 10

### Software Systems
- **Database Systems**: R/601/3400 | Level 2 | 10
- **Installing Computer Hardware**: T/601/3261 | Level 2 | 10
- **Developing Computer Games**: Y/601/3348 | Level 2 | 10
- **Multimedia Design**: L/601/3296 | Level 2 | 10
- **Customising Software**: M/601/3405 | Level 2 | 10
- **Presenting Information Using IT**: D/601/5828 | Level 2 | 10
- **Procedural Programming**: H/601/5099 | Level 2 | 10
- **Computer Graphics**: H/601/5801 | Level 2 | 10
- **IT Security**: J/601/4057 | Level 2 | 10
- **Spreadsheet Modelling**: K/601/5816 | Level 2 | 10
- **Event driven Programming**: L/601/5095 | Level 2 | 10
- **Doing Business Online**: Y/601/5083 | Level 2 | 10
- **Mathematics for IT**: Y/601/5794 | Level 2 | 10
- **Business IT Skills**: T/601/5012 | Level 2 | 10
- **Object Oriented Programming**: K/601/5105 | Level 2 | 10
- **Software Design**: T/601/5110 | Level 2 | 10

### Mathematics for IT
- **Mathematics for IT**: Y/601/5794 | Level 2 | 10
- **Business IT Skills**: T/601/5012 | Level 2 | 10
- **Object Oriented Programming**: K/601/5105 | Level 2 | 10
- **Software Design**: T/601/5110 | Level 2 | 10
### Edexcel Level 2 Certificate in Digital Applications for IT Users

100/5326/8  
180 GLH

### Edexcel Level 2 Extended Certificate in Digital Applications for IT Users

100/6442/4  
270 GLH

### Edexcel Level 2 Diploma in Digital Applications for IT Users

100/5327/X  
360 GLH

For Diploma

Candidates must complete either D101 or D201 from Group A plus three units from Group B. At least two of the four units making up the Diploma must be at Level 2.

#### Digital Applications for IT Users

**R (Root)**  
**A (Mandatory)**  
- Using ICT | J/103/2667 | Level 1  
- Using ICT | L/103/2671 | Level 2

**B (Optional)**  
- Multimedia | L/103/2668 | Level 1  
- Graphics | R/103/2669 | Level 1  
- ICT in Enterprise | J/103/2670 | Level 1  
- Multimedia | R/103/2672 | Level 2  
- Graphics | Y/103/2673 | Level 2  
- ICT in Enterprise | D/103/2674 | Level 2  
- Games Authoring | Y/501/6966 | Level 1  
- Games Authoring | D/501/6967 | Level 2

### IAM Level 2 Certificate in IT User Skills (ITQ) (QCF)*

501/1613/7  
120 GLH

To achieve the IAM Level 2 ITQ Certificate for IT User Skills a learner must complete units that give a combined total of 16 credits. The mandatory unit is worth 4 credits. At least 6 credits must come from the optional units at the level of the qualification. A minimum of 10 credits must therefore be achieved at Level 2. The remaining 6 credits can come from any level but only one unit from each optional group can contribute to the credit total.

**IT User Skills (ITQ)**  
**CGM 0 (Compound Group Mandatory 0)**

**A (Mandatory Unit)**  
- Improving Productivity Using IT | J/502/4156 | Level 2 | 4

**B (Optional Units)**

- AS (Audio Software)  
- BS (Bespoke Software)

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**CA (Computerised Accounting Software)**  
**CF (IT Communication Fundamentals)**  
**CT (Using Collaborative Techniques)**  
**DB (Database Software)**  
**DM (Data management software)**  
**DP (Drawing and planning software)**  
**EM (Using email)**  
**IM (Imaging software)**  
**IN (Using the internet)**  
**IS (IT security for users)**  
**MD (Using mobile devices)**  
**MM (Multimedia software)**  
**OP (Optimise IT system performance)**  
**PI (Personal information management software)**  
**PM (Project management software)**  
**PS (Presentation software)**  
**SF (IT Software fundamentals)**  
**SI (Set up an IT system)**  
**SP (Specialist software)**  
**SS (Spreadsheet software)**  
**UF (IT User fundamentals)**  
**VS (Video Software)**  
**WP (Word processing software)**  
**WS (Website software)**

### OCR Level 2 Certificate for Creative iMedia (QCF)

500/8529/3  
180 GLH

### OCR Level 2 Diploma for Creative iMedia (QCF)

500/8531/1  
285 GLH

In order to achieve this [Diploma] qualification candidates must achieve a total of 37 credits made up of 22 credits from level 2 and 15 credits from level 1, level 2 or level 3

**Creative iMedia**  
**CGM 0 (Compound Group Mandatory 0)**

**1 (Core units)**

- Pre-production skills | Y/600/7680 | Level 2 | 4

**Digital media skills for asset production | T/600/7685 | Level 2 | 5

**2 (Optional units)**

- 2C (Visual special effects)  
- 2D (Character modelling)
OCR Level 2 Certificate in IT User Skills (ITQ) (QCF)
500/6743/6
120 GLH

For a full qualification a candidate must achieve at least 16 credits. The qualification is made up of a mandatory group A, optional units in Group B and exempt units. There is one mandatory unit at level 2: Improving productivity using IT (4 credits). Within Group B, the optional units, candidates must achieve at least 12 credits of which: 6 credits must be at Level 2 or above. A QCF or SCQF accredited unit from another sector may be included (sector specific unit or SSU) with the following constraints: • must be from level 1 or above • must be of at least 4 credits • will only contribute a maximum of 4 credits • the credit does not count towards the requirement of 6 credits from Level 2 or above.

IT User Skills
1 (Structure)
A (Mandatory unit)
Improving Productivity Using IT | J/502/4156 | Level 2 | 4
B (Optional units)
AS (Audio software)
BS (Bespoke software)
CA (Computerised accounting software)
CF (IT communication fundamentals)
CT (Using collaborative technologies)
DB (Database software)
DM (Data management software)
DP (Drawing and planning software)
DS (Design software)
DT (Desktop publishing software)
EM (Using email)
IM (Imaging software)
IN (Using the internet)
IS (IT security for users)
MD (Using mobile devices)
MM (Multimedia software)
OP (Optimise IT system performance)
PI (Personal information management software)
PM (Project management software)
PS (Presentation software)
SAF (Internet safety for IT users)
SF (IT software fundamentals)
SI (Set up an IT system)
SP (Specialist software)
SS (Spreadsheet software)
UF (IT user fundamentals)
UKB (Using a computer keyboard)
VS (Video software)
WP (Word processing software)
WS (Website software)

OCR Level 1/2 Cambridge National Certificate in ICT*
600/4776/8
120 GLH

OCR Level 1/2 Cambridge National Diploma in ICT*
600/4778/1
240 GLH

Structure Requirements
Candidates complete 2 mandatory units and 6 optional units

ICT
A (ICT)
M (Mandatory)
Understanding computer systems | K/503/6025 | Level 1/2
Using ICT to create solutions in a business environment | M/503/6026 | Level 1/2
O (Optional)
Handling data using databases | A/503/6028 | Level 1/2
Handling data using spreadsheets | T/503/6027 | Level 1/2
Creating dynamic products using sound and vision | D/503/6040 | Level 1/2
Creating digital images | F/503/6029 | Level 1/2
Creating an interactive product using multimedia components | L/503/6034 | Level 1/2
Introduction to computer programming | T/503/6030 |
Level 1/2
Exploring computer hardware and networks | A/503/6031 | Level 1/2
Developing control systems | H/503/6041 | Level 1/2
Understanding technology - A project approach | J/503/6033 | Level 1/2

TLM Level 2 Certificate in IT User Skills in Open Systems and Enterprise (ITQ) 500/8073/8
120 GLH
1 mandatory unit at Level 2 (IPU) 4 credits. Optional units of 12 credits or more with at least 5 at level 2 or above and 7 from the ITQ framework. Up to 4 credits from a sector specific unit at any relevant level. Exempt units ICT Skills for Life, ICT Essential Skills (NI).

IT User Skills in Open Systems and Enterprise (ITQ) CGM (Compound Group Mandatory)

MU (Mandatory units)
Improving Productivity Using IT | J/502/4156 | Level 2 | 4

OU (Optional units grouped by title)
AS (Audio software)
BS (Bespoke Software)
CA (Computerised Accounting Software)
CF (IT Communication Fundamentals)
DB (Database software)
DM (Data Management Software)
DP (Drawing and planning software)
DS (Design software)
DT (Desktop Publishing)
EM (Using E-mail)
IM (Imaging Software)
IN (Using the Internet)
IS (IT Security for users)
MD (Using mobile IT devices)
MM (Multimedia Software)
OP (Optimise IT system performance)
PI (Personal information management software)
PM (Project management software)
PS (Presentation software)
SF (IT software fundamentals)
SP (Specialist software)
SS (Spreadsheet software)
SU (Set up an IT system)
UC (Using Collaborative Technologies)

UF (IT User fundamentals)
VS (Video software)
WP (Word processing software)
WS (Website Software)

Edexcel GCSE ICT single award
120 GLH
This qualification is made up of two compulsory units. Candidates must complete both units successfully to achieve this qualification.

Information and Communication Technology (ICT)
OG (Overarching Group)
A (Level 1/Level 2 GCSE in ICT)

01 : Living in a Digital World | A/503/7308 | Level 1/2
02 : Using Digital Tools | F/503/7309 | Level 1/2

Edexcel GCSE ICT double award
240 GLH
This qualification is made up of four compulsory units. Candidates must complete all units successfully to achieve this qualification.

Information and Communication Technology (ICT) (Double Award)
OG (Overarching Group)
A (Level 1/Level 2 GCSE in ICT (Double Award))

01 : Living in a Digital World | A/503/7308 | Level 1/2
02 : Using Digital Tools | F/503/7309 | Level 1/2
03 : Exploring Digital Design | T/503/7310 | Level 1/2
04 : Creating Digital Products | A/503/7311 | Level 1/2

AQA GCSE Computer Science
120 GLH
Both components are mandatory for this qualification. For assessments and subject awards for this specification there is a requirement that 100% of the assessment is terminal.

Computer Science
1 (AQA GCSE in Computer Science)

Practical Programming | F/503/7598 | Level 1/2
Computing Fundamentals | J/503/7599 | Level 1/2
The subject content is arranged in four Sections, 3.1 to 3.4. Below is an overview of the four sections:

**Section 3.1: Current and emerging technologies**

- 3.1.1 Computer systems and mobile technologies
- 3.1.2 Current input and output devices
- 3.1.3 Storage devices and media
- 3.1.4 Communications and entertainment

**Section 3.2: A range of ICT tools and techniques**

- 3.2.1 Systems life cycle
- 3.2.2 Working with information to solve problems
- 3.2.3 Operating systems and user interfaces
- 3.2.4 Application software
- 3.2.5 Word processing, DTP, web design and other presentation software
- 3.2.6 Graphics production and image manipulation
- 3.2.7 Spreadsheets and modelling software
- 3.2.8 Databases
- 3.2.9 Web browsing and e-mail
- 3.2.10 Web logs and social networking
- 3.2.11 Data logging and control software

**Section 3.3: Society’s use of ICT**

- 3.3.1 Legal issues
- 3.3.2 Social and economic issues
- 3.3.3 Political, ethical and environmental issues

**Section 3.4: Collaborative working**

- 3.4.1 Principles and processes of collaborative working

OCR GCSE Computing – J275
120 GLH

This GCSE specification in GCSE Computing consists of three mandatory units.

Computing
1 (Group No. 1 (Mandatory))

**Units**

- Computer systems and programming | F/600/2375 | Level 1
- Computing: Practical Investigation | Y/600/3256 | Level 1
- Programming project | D/600/3257 | Level 1
1.1 Overview of OCR GCSE ICT

**Unit B061**
- **Title:** ICT in today’s world
- **Assessment Type:** Written paper or Computer-based test
- **Duration:** 1 hour – 60 marks
- **Course:** 20% of the GCSE
- **Course:** 40% of the GCSE Short Course
- **Written paper:** candidates answer all questions

**Unit B062**
- **Title:** Practical applications in ICT
- **Assessment Type:** Controlled assessment
- **Marks:** 60 marks
- **Course:** 30% of the GCSE
- **Course:** 60% of the GCSE Short Course
- **Candidates:** create an ICT solution using ICT applications

**Unit B063**
- **Title:** ICT in context
- **Assessment Type:** Written paper or Computer-based test
- **Duration:** 1 hour – 60 marks
- **Course:** 20% of the GCSE
- **Written paper:** based on pre-release material: candidates answer all questions

**Unit B064**
- **Title:** Creative use of IT
- **Assessment Type:** Controlled assessment
- **Marks:** 60 marks
- **Course:** 30% of the GCSE
- **Candidates:** solve a problem by creating and developing a multimedia solution with appropriate creative elements

**Unit B065**
- **Title:** Coding a solution
- **Assessment Type:** Controlled assessment
- **Marks:** 60 marks
- **Course:** 30% of the GCSE
- **Candidates:** identify a potential coded solution to a problem and solve using basic programming techniques

To obtain a GCSE (Single Award) in ICT, candidates are required to study Unit 1, Unit 2, Unit 3 and Unit 4.

To complete a GCSE (Short Course) in ICT, candidates are required to study Unit 1 and Unit 2.
As the UK’s national academy for engineering, we bring together the most successful and talented engineers from across the engineering sectors for a shared purpose: to advance and promote excellence in engineering. We provide analysis and policy support to promote the UK’s role as a great place from which to do business. We take a lead on engineering education and we invest in the UK’s world class research base to underpin innovation. We work to improve public awareness and understanding of engineering. We are a national academy with a global outlook and use our international partnerships to ensure that the UK benefits from international networks, expertise and investment.

The Academy’s work programmes are driven by four strategic challenges, each of which provides a key contribution to a strong and vibrant engineering sector and to the health and wealth of society.

**Drive faster and more balanced economic growth**
The strategic challenge is to improve the capacity of UK entrepreneurs and enterprises to create innovative products and services, increase wealth and employment and rebalance the economy in favour of productive industry.

**Lead the profession**
The strategic challenge is to harness the collective expertise, energy and capacity of the engineering profession to enhance the UK’s economic and social development.

**Foster better education and skills**
The strategic challenge is to create a system of engineering education and training that satisfies the aspirations of young people while delivering the high calibre engineers and technicians that businesses need.

**Promote engineering at the heart of society**
The strategic challenge is to improve public understanding of engineering, increase awareness of how engineering impacts on lives and increase public recognition for our most talented engineers.