

GET READY TO STUDY INFORMATION TECHNOLOGY (EXTENDED CERTIFICATE)

If you are planning to study Extended Certificate in Information Technology with us in September, please review this document and complete the required activities. Please bring the completed activities with you at induction.

FAQ

What specification will I study?

OCR Extended Certificate in Information Technology ([Specification at a glance](#))

How many lessons will I have a week?

You'll have 3 lessons a week, totalling 4hrs 30mins

Who can I contact if I have a question about this subject?

Alex Melhuish a.melhuish@barnsley.ac.uk

David Clapham d.clapham@barnsley.ac.uk

What subjects go well with Information Technology?

Economics, Business, Geography, Media

What grades should I have?

A GCSE point score of 5 and above, this will include a 5 or above in English Language and Maths.

WHAT WILL I STUDY?

The Cambridge Technical in IT allows you to gain an insight into IT and cybersecurity.

Year 1

You will study two units which develop your understanding of IT technologies and practices which are essential for IT professionals. The uses of information in the public domain, globally, in the cloud and across the internet, by individuals and organisations will also be explored. You will analyse the management of both data and information and the techniques utilised that can give any organisation a competitive edge.

- Fundamentals of IT (Paper 1)
 - Hardware
 - Software
 - Business Systems
 - Employability in IT industry
 - Threats & Security for IT Systems
- Global Information (Paper 2)
 - Information Handling
 - World Wide Web Technologies
 - IT related Legislation
 - Green IT
 - Information Flow
 - IT Security Policies & Security

Year 2

You will gain knowledge and understanding of the range of threats, vulnerabilities and risks that impact on both individuals and organisations. The solutions that can be used to prevent or deal with cyber security incidents resulting from these challenges will be analysed. You will apply your knowledge and understanding of cyber security issues and solutions by reviewing and making recommendations for ways to best protect digital systems and information.

- Cyber Security (Paper 3 Exam)
 - What is Cyber Security?
 - Threats and Vulnerabilities
 - Security Measures
 - Managing Cyber Security Incidents

You will also cover two coursework based units:

- Product Development (Unit 9 Coursework)
- Internet of Everything (Unit 17 Coursework)

HOW WILL I BE ASSESSED?

For this qualification, you will complete 5 units – 3 mandatory units and 2 optional units.

The following are mandatory units and are assessed through examinations which are set and marked by the exam board.

- Unit 1 – Fundamentals of IT
- Unit 2 – Global Information
- Unit 3 – Cyber Security

You will also complete two units chosen by your teacher from a bank of four optional units. Each of these units is assessed through coursework which is assessed by the teacher and moderated by the exam board.

- Unit 8 – Project Management
- Unit 9 – Product Development
- Unit 11 – Systems Analysis and Design
- Unit 17 – Internet of Everything

The qualification is graded Pass, Merit, Distinction and Distinction*

Unit	Unit title	Guided learning hours (GLH)	Unit ref no. (URN)	Assessment type	Mandatory or optional
1	Fundamentals of IT	90	M/507/4999	Exam	Mandatory
2	Global information	90	R/507/5000	Exam	Mandatory
3	Cyber security	60	Y/507/5001	Exam	Mandatory
8	Project management	60	F/507/5008	Coursework	Optional
9	Product development	60	A/507/5010	Coursework	Optional
11	Systems analysis and design	60	J/507/5012	Coursework	Optional
17	Internet of Everything	60	H/507/5020	Coursework	Optional

To achieve this qualification there's mandatory content that all learners must have successfully mastered. This content is shown in the table above and it contributes 66.6% to the qualification grade.

WHAT WILL I NEED?

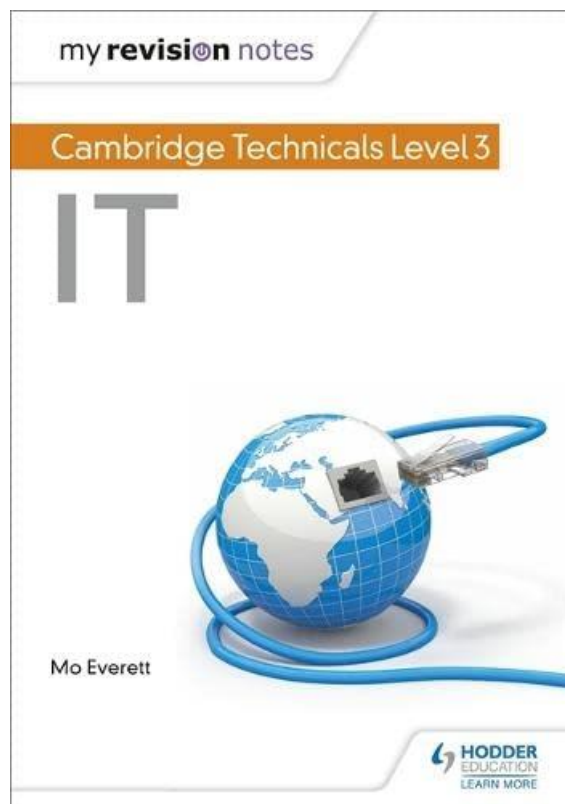
To study the course you will need the following equipment for use at college:

- Mini-whiteboard and pen
- A calculator
- A folder with dividers
- Pens and pencils
- Highlighters
- A ruler

You will also need a personal computer (desktop preferred) for use at home and access to the internet.

We recommend all students buy the following textbook:

My Revision Notes: Cambridge Technicals Level 3 IT
by Maureen Everett



Available here: <https://bit.ly/3xGRexR>

FIND OUT MORE

These activities are to help broaden your understanding of the subject in preparation for studying this subject at an advanced level.

<p>Careers</p>	<ul style="list-style-type: none"> • Application analyst • Cyber security analyst • Data analyst • Data scientist • Database administrator • Information systems manager • IT consultant • IT technical support officer • Penetration tester • Software engineer • Systems analyst <p>Jobs where IT would be useful include:</p> <ul style="list-style-type: none"> • Applications developer • Border Force officer • Business analyst • Estimator • Forensic computer analyst • Network engineer • IT sales professional • UX researcher • Web content manager
<p>YouTube</p>	<p>Unit 1: Fundamentals of IT https://bit.ly/3mCXel2</p> <p>Unit 2: Global Information https://bit.ly/3QabVtk</p> <p>Computerphile https://www.youtube.com/user/Computerphile</p>
<p>Further Reading / Useful websites</p>	<p>Unit 1: Fundamentals of IT https://www.csnewbs.com/ctech-unit-1-fundamentals-of-it</p> <p>Unit 2: Global Information https://www.csnewbs.com/ctech-unit-2-globalinformation</p>

REQUIRED ACTIVITIES





It is important that all the required activities are completed in preparation for starting your course. Please bring these completed activities with you at induction. Choosing your A Levels can be a challenge for some learners therefore if you are undecided around which subjects you are planning to study completing these activities will give yourself greater insight into the course to help ensure you have made the right choice.

INDUCTION TASKS

Task 1 (Technology Changes)

Below are two examples of how technology has advanced and changed.

Complete the table by adding 3 more examples of advancements in technology.

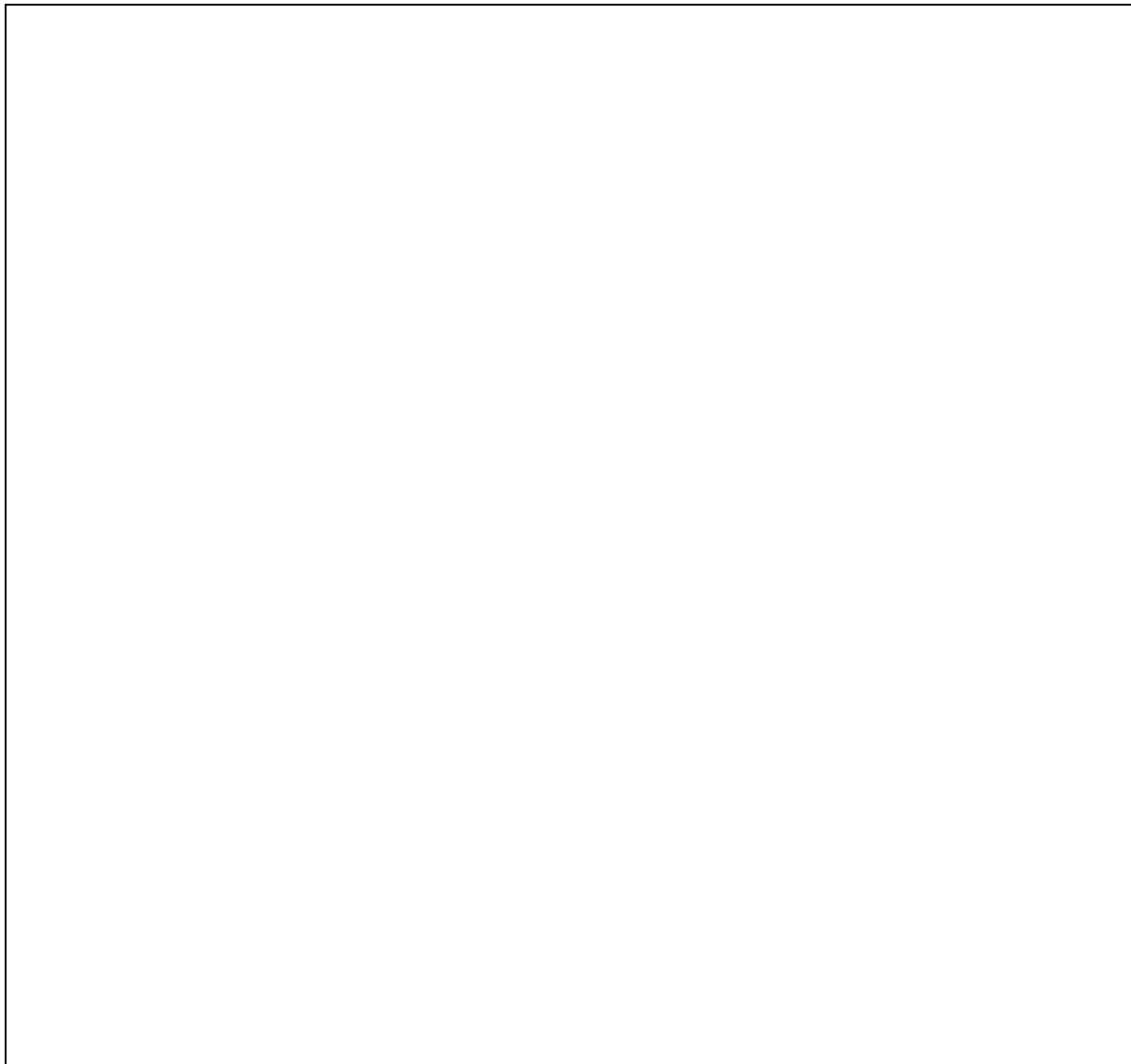
Image (old technology)	Image (new technology)	Technology name
 <p data-bbox="215 1256 359 1283">PanelSwitchman</p>	 <p data-bbox="639 1211 995 1272">http://www.bbc.co.uk/news/technology-14030720 (chocolate printer)</p>	<p data-bbox="1177 1095 1278 1128">Printer</p>
 <p data-bbox="220 1615 391 1641">DBduo Photography</p>	 <p data-bbox="644 1653 772 1680">Shekhar Sahu</p>	<p data-bbox="1171 1473 1284 1507">Monitor</p>

Task 2 (Impact of technology)

Use the video link below, and two other sources of information, to find out how cloud computing works. Record your sources of information in the table below the video. On lined paper, make handwritten notes on what you have learned.

Provided Source	What is "The Cloud" as Fast As Possible – YouTube https://www.youtube.com/watch?v=dsKlpLKo8AE
Additional Source 1	
Additional Source 2	

Insert clear photos of your handwritten notes into the box









In your own words identify the positive and negative impacts of cloud computing for businesses in general. You need to identify at least ten impacts.

Cloud positive impacts for business	Cloud negative impacts for business

Task 3 (Hardware Research Task)

Complete the table below. The first row has been completed as an example. You may need to carry out research using the internet.

Device	What is it?	Input, Output or Storage?	Used for? (Find a different answer for each device.)
	Printer	Output	Typically, this device is used to print information from a computer onto paper.
			
			
			
			
			

Task 4 (Demonstrating Knowledge)

Demonstrate your knowledge by completing the exercises. Choose from the list of possible answers in each section. Research using the internet if you are unsure.

Components

<i>CPU</i>	<i>BIOS</i>	<i>Power supply</i>	<i>Hard drive</i>	<i>Network card</i>
<i>Motherboard</i>	<i>RAM</i>	<i>USB Port</i>	<i>ROM</i>	<i>Video card</i>

I connect computers and allow them to talk to each other	
I wake up the computer and remind it what to do	
I interpret, process and execute instructions	
Information is stored on my magnetic cylinders	
I hold all of the other circuit boards	
I handle the graphics that are displayed on the monitor	
I am the type of port used by flash drives	

Storage

<i>Information</i>	<i>Flash drive</i>	<i>CD</i>	<i>Primary</i>	<i>DVD</i>	<i>Secondary</i>
--------------------	--------------------	-----------	----------------	------------	------------------

___?___memory is stored on chips located on the motherboard	
___?___memory is stored on the hard drive	
Can hold information greater than a CD or DVD	
Usually holds up to 650 to 700 MB of memory	
Typically holds 4.7 to 8.5 GB	
The purpose of storage in a computer is to hold data or ___?___	

Operating Systems

<i>Windows</i>	<i>Operating system</i>	<i>GUI</i>	<i>Upgraded</i>	<i>User friendly</i>	<i>BIOS</i>
----------------	-------------------------	------------	-----------------	----------------------	-------------

The large program that controls how the CPU communicates with other hardware components is the ___?___	
A computer that is easy to operate is called ___?___	
___?___is the most common operating system for PCs	

Operating systems are constantly being ___?___as technology advances	
An operating system often uses a ___?___to help the user navigate within a computer system	

Programs

<i>Downloaded</i>	<i>Translators</i>	<i>Installing</i>	<i>Programming</i>	<i>Program</i>	<i>Programmers</i>
-------------------	--------------------	-------------------	--------------------	----------------	--------------------

A ___?___ is a set of instructions that tells the computer how to perform a specific task	
Programs are like ___?___ that allow people to work with computers without learning the computer's language	
Using bits and bytes in different combinations to represent code is known as ___?___	
Copying a program onto your computer's hard drive from another source is known as ___?___ the program	
People who write code to create programs are known as computer ___?___	
Some programs can be ___?___ from the internet directly to your hard drive	

Software

<i>Research</i>	<i>Spreadsheet</i>	<i>Database</i>
<i>Entertainment</i>	<i>Desktop Publishing</i>	<i>Word Processing</i>

Used to create a birthday card for a friend	
Used for balancing your finances	
Finding information on pyramids	
Playing solitaire	
Calculating Math	
Keeping an address book	
Writing an essay	
Making a newsletter	
Writing a story about aliens	