

Cambridge Technical​
 Introductory Diploma IT

Sixth Form Transition Pack





Examination Board: OCR

Course content: The Cambridge Technical qualifications offer opportunities to develop the skills demanded by employers in the UK today. These vocationally-related diplomas are included in the Qualifications and Credit Framework. Learners will have the opportunity to acquire essential knowledge and tools for the world of work, developing transferable skills such as planning, research and analysis, working with others and effective communication. ​

All learners will study the following three mandatory units;

**Fundamentals of IT,**

**Global Information**

**Virtual and Augmented Reality.**

These units provide learners with an insight into the IT sector, as they investigate the pace of technological change, IT infrastructure, and the flow of information on a global scale, as well as the important legal and security considerations. There will be an additional two units covered later in the course.

Unit 1 Fundamentals of IT (exam 90GLH 1 hour 30 minutes written paper)

* Types of computer system
* Communications hardware
* Hardware troubleshooting
* Number systems and conversion
* Types of software
* Communication methods
* Software troubleshooting
* Protocols
* Virtualisation
* Communication skills and technology
* Personal attributes and job roles
* Professional bodies
* Ethical issues
* Threats and security
* Safe disposal of data and computer equipment ​

Essential summer reading

* Cambridge Technicals Level 3 IT by Victoria Ellis, Graham Manson, Saundra Middleton, Maureen Everett, ISBN 9781471874918 <http://www.ocr.org.uk/qualifications/vocational-education-and-skills/cambridge-technicals-itlevel-3-certificate-extended-certificate-introductory-diploma-foundation-diploma-diploma05838-05842-2016-suite/?qualtype_key=cambridge-technicals/>
* <http://www.ocr.org.uk/Images/260857-cambridge-technicals-it-summary-brochure.pdf>
* <http://www.ocr.org.uk/Images/267354-unit-05-virtual-and-augmented-reality.pdf>



Essential Summer Viewing

<https://www.youtube.com/watch?v=Yr11rrbtADc>

<https://www.youtube.com/watch?v=mcgcumKFpQ>[s](https://www.youtube.com/watch?v=mcgcumKFpQs)

<https://www.youtube.com/watch?v=vz0UUVDt2ps>

<https://www.youtube.com/watch?v=0W6Jz44L1wU>

<https://www.youtube.com/watch?v=usKMKq977iA>

<https://www.youtube.com/watch?v=QZ0o7avcvv4>

[https://www.youtube.com/watch?v=kDvW8R4BL0I&list=PLqJeFUp\_WQXqzSIyYd2U9vuiaPH](https://www.youtube.com/watch?v=kDvW8R4BL0I&list=PLqJeFUp_WQXqzSIyYd2U9vuiaPH%20)

<https>[://www.youtube.com/watch?v=9wfZH6ZWxmk](https://www.youtube.com/watch?v=9wfZH6ZWxmk)



In preparation for the course.

These are the Tasks you should

compete

Tasks to be completed

Students need to complete the following work, which would cover Learning Objective 1, showing that they understand virtual and augmented reality and how they may be used. this work requires research.

* Task 1 Describe the use of Virtual and Augmented reality by organisations. You should discuss a wide range of uses and include where and how they are used, this could be in the form of a report or presentation with speakers notes, make sure you include pictures.
* Task 2 Select one example of a virtual reality resource and explain the impact that the use of the identified technology has had on society. The evidence could again be a report or presentation with speaker notes or a report
* Task 3 Select one example of an Augmented reality resource and explain the impact that the use of the identified technology has had on society. The evidence could again be a report or presentation with speaker notes or a report

Summer work

Each topic below is covered in unit 1. Before we can assess your prior knowledge, you will need to conduct some research of your own.

Each section within this table should either have notes on what you understand or a link to a site/video that you have found useful

|  |
| --- |
| Find out details about the following:  |
| Desktop/server |  |
| Tablet/hybrid |  |
| Smartphone |  |
| Embedded system/Internet of Things (e.g. cars, home appliances, etc.) |  |
| Mainframe |  |
| Quantum Computers |  |
| Explain some of these connectivity methods. How do each of these connects work? Which is superior? Which have you used and what for? |
| Fibre optic leads Copper in the leads Wireless technologies (Bluetooth, WiFi, microwave,infrared, laser, Satellite, GSM, 3G/4G and future technologies) |  |
| What are the following? Explain and add images of what each of these devices are. |
| Hub  |  |
| Switch  |  |
| Router  |  |
| Modem  |  |
| Wireless access point  |  |
| Combined/hybrid devices  |  |
| Units of measurement, Explain the following measurements and what data they represent |
| Bit, nibble, byte  |  |
| Metric (kilo, mega, giga, tera, peta)  |  |
| Binary (kibi, mebi, gibi, tebi, pebi**)**  |  |
| Decimal |  |
| Hexadecimal |  |
| Explain the meaning of the different types of software that you can buy/obtain. |
| Open source |  |
| Closed source |  |
| Off the shelf |  |
| Bespoke |  |
| Shareware |  |
| Freeware |  |
| Embedded |  |
| What is a VOIP? |  |
| Explain what is teleconferencing? |  |
| Find out what the following protocols stand for. What is a protocol?  |
| IP |  |
| TCP |  |
| UDP |  |
| SMTP |  |
| FTP  |  |
| HTTP  |  |
| SNMP  |  |
| ICMP  |  |
| POP  |  |
| What is a server? Explain some of the different types like file/printdatabasewebemail servers.  |
| Explain the following network characteristics |
| Peer to peer  |  |
| Client server  |  |
| Find an image for each of the topology diagrams BusStarRingMesh |  |
| Explain the different connectivity methods  |
| LAN (Ethernet, Token Ring)  |  |
| WAN (ADSL, leased line, ISDN)  |  |
| MAN  |  |
| Voice (PSTN, cellular)  |  |
| Satellite (voice, data)  |  |
| Explain the following different business systems. |
| MIS  |  |
| CRM  |  |
| SOP  |  |
| Explain what is meant by whistle blowing?  |  |
| Explain what are these threats? How can they be prevented?  |
| Phishing  |  |
| Hacking  |  |
| Viruses  |  |
| Trojan  |  |
| Interception  |  |
| Eavesdropping  |  |
| Data theft  |  |
| Explain the terms to do with physical security. What do the following definitions mean? How can they help with making sure computer systems are secure?  |
| Locks  |  |
| Biometrics  |  |
| RFID  |  |
| Tokens  |  |
| Privacy screens  |  |
| Explain about the following digital security measures that can be used by a business.  |
| Anti-virus software |  |
| Firewalls  |  |
| Anti-spyware  |  |
| Username/passwords  |  |
| Permissions  |  |
| Encryption  |  |
| Safe disposal of data and computer equipment |  |
| Overwrite data  |  |
| Electromagnetic wipe  |  |
| Physical destruction  |  |