

# O Level Computer Studies 7010

## Unit 2: The social and economic implications of the use of computers

### Recommended Prior Knowledge

Students need to have studied unit 1 before beginning this Unit.

### Context

This unit builds on the work done in unit 1 looking at the effects of using a range of computer applications

### Outline

Students review the applications studied in unit 1 and identify advantages and disadvantages of use. The unit could be taught directly after unit 1 or later in the course to review and extend the work. *In addition to knowledge about applications, candidates should be able to demonstrate a broad knowledge of the economic reasons for using computers and the effects of their use across a range of application areas. They should be able to formulate a reasoned view of the potential effects of any suggested application or development and to show their critical abilities in balancing the advantages and disadvantages of a computerised system.*

| AO  | Learning outcomes                                                                                                                                                                                                                                                                   | Suggested Teaching activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Learning resources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| 1.2 | Social and economic effects on people and organisations associated directly with the application, on other individuals and organisations, and on society in general.<br><br>Economic reasons for the use of computers. Changes to and the development of new products and services. | Using the applications studied in unit 1 identify advantages and disadvantages of the use of those applications.<br>Impact on society of the applications studied in unit 1. <ul style="list-style-type: none"><li>• loss of jobs</li><li>• deskilling (caused by computers taking over some of the tasks done by humans therefore skills lost)</li><li>• use of call centres overseas (e.g. in service industries, banks etc.; can be cheaper to take these jobs overseas)</li></ul> Computers and modern communications techniques allow training, design work, etc. to be done in several countries<br><br>Look at the economic reasons for using computers, demonstrate this through the use of case studies e.g. banking, shopping, manufacture etc.<br><br>Also refer to comments above when considering the case studies | <a href="http://www.theteacher99.btinternet.co.uk/theteacher/gcse/newgcse/module9/task9.htm">http://www.theteacher99.btinternet.co.uk/theteacher/gcse/newgcse/module9/task9.htm</a> identifies advantages and disadvantages of a hospital control system<br><br>L+W 2.1<br><br><a href="http://www.bbc.co.uk/schools/gcsebitesize/ict/implications/2workpatternsrev4.shtml">http://www.bbc.co.uk/schools/gcsebitesize/ict/implications/2workpatternsrev4.shtml</a> better quality products<br><br><a href="http://www.cedar.u-net.com/ict4demo/loader/indexc.htm">http://www.cedar.u-net.com/ict4demo/loader/indexc.htm</a> advantages of banking |

| AO | Learning outcomes                                                                                                      | Suggested Teaching activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Learning resources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|    | <p>Changes in the working environment, employment and retraining.</p>                                                  | <p>Look at the changes in employment because computers are used; demonstrate this through the use of case studies e.g. banking, secretarial work, manufacture etc.</p> <p>Look at the need for retraining including the need for updating skills as new and upgraded packages are introduced also consider ways of training individuals e.g. use of CD-ROMs, DVDs and multimedia.</p> <p>Also refer to comments above when considering the case studies.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>L+W Chapter 2.2</p> <p><a href="http://www.colchsfc.ac.uk/ict/ICTASCourse/ict1/ict1-05/default.htm">http://www.colchsfc.ac.uk/ict/ICTASCourse/ict1/ict1-05/default.htm</a> detailed article on employment and training</p> <p><a href="http://www.bbc.co.uk/schools/gcsebitesize/ict/implications/2workpatternsrev1.shtml">http://www.bbc.co.uk/schools/gcsebitesize/ict/implications/2workpatternsrev1.shtml</a> introduction to changes in work patterns</p> <p><a href="http://www.theteacher99.btinternet.co.uk/theteacher/gcse/newgcse/module9/task12.htm">http://www.theteacher99.btinternet.co.uk/theteacher/gcse/newgcse/module9/task12.htm</a> advantages of CAL.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|    | <p>Privacy and integrity of data, data protection legislation, hacking and other computer crime, computer viruses.</p> | <p>Identify the need to protect the privacy and integrity of data and the type of law that support this (laws vary from country to country but usually the basic premises are very similar)</p> <p>Introduce the idea of computer crime and look at methods of keeping data secure and identify sensible precautions against computer viruses. Computer crime includes: hacking, transferring funds illegally/fraud, deliberate sending of viruses, etc.</p> <p>Examples from:</p> <ul style="list-style-type: none"> <li>• hacking (suitable precautions include: use of passwords and ids, anti-hacking software, monitoring the system, physical securities, encryption of data, etc.)</li> <li>• sending viruses (suitable precautions include: anti-virus software, care when downloading/using information from “unknown” disks, care when using internet/receiving emails and associated attachments, etc. Recall that backing up files doesn’t guard against viruses)</li> <li>• fraud/transferring funds (similar precautions as with hacking)</li> </ul> | <p>L+W 2.4</p> <p><a href="http://www.informationcommissioner.gov.uk/cms/DocumentUploads/Data%20Protection%20Act%20Fact%20V2.pdf">http://www.informationcommissioner.gov.uk/cms/DocumentUploads/Data%20Protection%20Act%20Fact%20V2.pdf</a> is the UK fact sheet</p> <p><a href="http://www.theteacher99.btinternet.co.uk/theteacher/gcse/newgcse/module8/task8.htm">http://www.theteacher99.btinternet.co.uk/theteacher/gcse/newgcse/module8/task8.htm</a> provides a good introduction</p> <p><a href="http://www.cedar.u-net.com/ict4demo/loader/indexc.htm">http://www.cedar.u-net.com/ict4demo/loader/indexc.htm</a> provides more detailed information</p> <p><a href="http://www.bbc.co.uk/schools/gcsebitesize/ict/implications/0moralandsocialissuesrev4.shtml">http://www.bbc.co.uk/schools/gcsebitesize/ict/implications/0moralandsocialissuesrev4.shtml</a> introduction to internet security</p> <p><a href="http://www.theteacher99.btinternet.co.uk/theteacher/gcse/newgcse/module8/task9.htm">http://www.theteacher99.btinternet.co.uk/theteacher/gcse/newgcse/module8/task9.htm</a> computer crime</p> <p><a href="http://ictclassroom.org/index.php?option=com_content&amp;task=view&amp;id=78&amp;Itemid=46">http://ictclassroom.org/index.php?option=com_content&amp;task=view&amp;id=78&amp;Itemid=46</a> introduction to computer crime</p> <p><a href="http://www.theteacher99.btinternet.co.uk">http://www.theteacher99.btinternet.co.uk</a></p> |

| AO | Learning outcomes                                                 | Suggested Teaching activities                                                                                                                                                                                                                                                                                                                                                                                         | Learning resources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|    | Security and reliability including consequences of system failure | <p data-bbox="734 794 1624 890">Introduce the idea of system failure using contrasting examples e.g. failure during a batch update of customer records and a failure of an air traffic control system.</p> <p data-bbox="734 922 1624 1040">Other examples could be chosen from various case studies (e.g. control of chemical/nuclear plant, monitoring of patients in a hospital etc. to validate the point)...</p> | <p data-bbox="1624 225 2121 443"> <a href="http://theteacher/gcse/newgcse/module5/task6.htm">k/theteacher/gcse/newgcse/module5/task6.htm</a> details methods of system security<br/> <a href="http://www.bbc.co.uk/schools/gcsebitesize/ict/databases/6datasecurityrev1.shtml">http://www.bbc.co.uk/schools/gcsebitesize/ict/databases/6datasecurityrev1.shtml</a> provides an introduction to data security         </p> <p data-bbox="1624 459 2121 703"> <a href="http://computer.howstuffworks.com/viruses8.htm">http://computer.howstuffworks.com/viruses8.htm</a> details of virus prevention<br/> <a href="http://www.teach-ict.com/news/news_virus.htm">http://www.teach-ict.com/news/news_virus.htm</a> viruses in the news<br/> <a href="http://www.bbc.co.uk/science/hottopics/computerviruses/types.shtml#anim">http://www.bbc.co.uk/science/hottopics/computerviruses/types.shtml#anim</a> how viruses work         </p> <p data-bbox="1624 735 1747 767">L+W 2.5</p> <p data-bbox="1624 794 2121 1040"> <a href="http://www.1776soft.com/ffblowcs.htm">http://www.1776soft.com/ffblowcs.htm</a> introduction to the consequences of system failure<br/> <a href="http://www.vnunet.com/computing/news/2141471/nats-system-failure-delays">http://www.vnunet.com/computing/news/2141471/nats-system-failure-delays</a> an article for discussion about air traffic control<br/>           L+W 2.6         </p> |