



**Level 3 Certificate in Information Systems (102)**  
**75 Credits**






<b>Unit:</b> Introduction to Computers	<b>Total Qualification Time:</b> 200
<b>Exam Paper No.:</b> 1	<b>Number of Credits:</b> 20
<b>Prerequisites:</b> None	<b>Corequisites:</b> GCSE qualification.
<p><b>Aim:</b> The unit aim is to give learners an understanding of the technical background in the use of computers in today's world; addressing fundamental areas of computer hardware and software, data, information, communications, internet and technology concepts. The basic concepts of this unit are: principles of hardware operation, software and networking; roles of computers in business and society as a whole, including ethical and legal issues. Learners learn of the application of computers, consider their social and economic implications, examine questions of privacy and security, and analyse recent advances in computer technology. In addition, learners are exposed to the concepts of computer programs, including: word processing, spreadsheet, graphics and database applications, programming, and user networks. The unit prepare learners for the use of the computer as a productivity tool; fundamentals of how a computer works by understanding hardware and the distinctions between system software and application software. The unit also provides an understanding of the concepts behind the Internet Technology.</p>	
<b>Required Materials:</b> Recommended Learning Resources.	<b>Supplementary Materials:</b> Lecture notes and tutor extra reading recommendations.
<b>Special Requirements:</b> None	
<p><b>Intended Learning Outcomes:</b></p> <p>1 Why computers are important in today's world; what exactly is a computer, and its main functions.</p> <p>2 Computer hardware parts components, their functions and computer numbering system.</p> <p>3 Internet Service Provider (ISP); the various kinds of multimedia files found on the Web and the software needed to use them.</p>	<p><b>Assessment Criteria:</b></p> <p>1.1 Define the difference between data and information</p> <p>1.2 Define bits and bytes, and how are they measured</p> <p>1.3 Evaluate the hardware and software a computer uses to perform its functions</p> <p>1.4 Analyse the different main types of software found in a computer</p> <p>1.5 Identify the different kinds of computers available</p> <p>2.1 Analyse devices that make up a computer</p> <p>2.2 Explain the components inside the computer system</p> <p>2.3 Describe the functions of the various components</p> <p>2.4 Describe the functional keys of the keyboard</p> <p>2.5 Describe binary, decimal, octal and hexadecimal numbering systems.</p> <p>3.1 Define e-commerce</p> <p>3.2 Define online annoyances like spam, cookies, adware, spyware, malware, phishing, and Internet hoaxes</p> <p>3.3 Define a Web browser and explain the different browser applications</p> <p>3.4 Outline a URL, and identify its parts</p> <p>3.5 Explain how data travels on the Internet</p> <p>3.6 Identify and demonstrate the options for connecting to the Internet</p>

<p>4 System Software, including the Operating System, Utility Programs, and File Management System.</p>	<p>4.1 Describe the functions of an operating system</p> <p>4.2 Identify different kinds of operating systems available</p> <p>4.3 Identify the most common desktop operating systems</p> <p>4.4 Elaborate how the operating system provides a means for users to interact with the computer</p> <p>4.5 Explain how the operating system help manage the processor</p> <p>4.6 Illustrate how the operating system manages memory and storage</p> <p>4.7 Outline how the operating system manages hardware and peripheral devices</p> <p>4.8 Demonstrate how the operating system interacts with application software</p> <p>4.9 Explain how the operating system helps the computer start up</p> <p>4.10 Define the main desktop and Windows features</p> <p>4.11 Explain the purpose of utility programs</p> <p>4.12 Describe software utilities included in system software</p>
<p>5 Application Software; the differences between application software and system software.</p>	<p>5.1 Explain the purpose of application software</p> <p>5.2 Analyse different popular business softwares</p> <p>5.3 Define the different kinds of multimedia software</p> <p>5.4 Define the different types of entertainment software</p> <p>5.5 Analyse the different types of drawing software</p> <p>5.6 Explore software used in small and large businesses</p> <p>5.7 Illustrate how to install, uninstall, and open software programs</p>
<p>6 Understand how the Central Processing Unit (CPU) operates; including related links, information, and terms.</p>	<p>6.1 Be able to identify and outline the computer CPU layout.</p> <p>6.2 Outline what the CPU does, and how a user can evaluate its performance</p> <p>6.3 Identify how memory works in a computer</p> <p>6.4 Explain the computer's main storage devices</p> <p>6.5 Analyse the components that affect the output of video on the computer</p> <p>6.6 Identify the components that affect computer's sound quality</p> <p>6.7 Identify the ports available on desktop computers</p> <p>6.8 Explain how to ensure the reliability of a computer system</p>
<p>7 Understand network topological structure; major network components and</p>	<p>7.1 Define a network, and what are the advantages of setting up one</p>

different systems or network devices connected.	<p>7.2 Identify the differences between a client/server network and a peer-to-peer network</p> <p>7.3 Explain the main components of a network</p> <p>7.4 Analyse a wired Ethernet network, and how is it implemented</p> <p>7.5 Analyse wireless Ethernet networks, and how are they implemented</p> <p>7.6 Explain how hackers attack a network, and what harm can they cause</p> <p>7.7 Explain a firewall, and how it keep computers safe from hackers</p>
8 Wireless data connections used in mobile computing; types of wireless communications and how to set the Settings.	<p>8.1 Identify the various mobile computing devices</p> <p>8.2 Define the advantages and limitations of mobile computing.</p> <p>8.3 Analyse software solutions for providing access to a remote computer.</p> <p>8.4 Explore mobile USB and virtualisation technologies</p> <p>8.5 Explain why wireless networks more vulnerable than wired networks, special precautions required to ensure secure wireless network</p>
9 Information Technology health and safety issues and examples in the workplace.	<p>9.1 Identify cyber-crime motives and profiles</p> <p>9.2 Describe the impacts of an attack</p> <p>9.3 Explain the various types of attacks</p> <p>9.4 Explain the procedures of protecting corporate/network assets</p> <p>9.5 Explain the general rules for communicating effectively and professionally over the internet</p>
<p><b>Methods of Evaluation:</b> A 2-hour written examination paper with Section A and Section B. Section A has 40 multiple choice questions. Section B has three essay questions, each carrying 20 marks. Candidates are required to answer all questions. Candidates also undertake project/coursework in Introduction to Computers with a weighting of 100%.</p>	

### Recommended Learning Resources: Introduction to Computers

<p><b>Text Books</b></p>	<ul style="list-style-type: none"> <li>• Introduction to Computers and Information Systems: The Internet Edition. ISBN-10: 0130962538</li> <li>• Basic for Introductory Computing by Larry E. Long. ISBN-10: 0131706063</li> <li>• Computers by Larry Long, Nancy Long Larry E. Long ISBN-10: 0130962538</li> </ul>
<p><b>Study Manuals</b></p> 	<p>BCE produced study packs</p>
<p><b>CD ROM</b></p> 	<p>Power-point slides</p>
<p><b>Software</b></p> 	<p>None</p>