Roadmap of alignment matrix of unit standard 117925

Describe the concepts of Information and Communication Technology (ICT) and the use of its components in a healthy and safe manner

Please note: The page numbers correspond to the learner study guide and portfolio of evidence. Only the first page number is given.

Assessment methods

Formative: Individual and small group verbal and written exercises; questioning and answering sessions; learner to discuss and explain aspects of spreadsheets included in this programme; skills practices; demonstrations; examples; foundational and practical

Summative: Individual written exercises; job-related assignments; skills practices and job applications; reflexive

Alignment matrix 117925 - Details of specific outcome and assessment criteria	Page in learner study guide	Formative assessment	Summative assessment
SPECIFIC OUTCOME 1 - Describe the components of Information and Communication Technologies.	As per table of contents		
1. Types of computers are described in terms of their size, application, and relation to each other. RANGE - Types of computers - at least five of: mainframes, minicomputers, personal computers, network computers (thin clients), laptop computers, multimedia computers, personal digital assistants (PDA).			
2. The components of a personal computer are described in terms of their role in the system as a whole is described. RANGE - Input, output, storage, peripherals, ROM, Ports (Serial, Parallel, USB).			
3. The major components of ICT is described in terms of their relationship to each other. RANGE - Components include but is not limited to: Client computers (typically PCs), Various Networks (LANs & WANs), server computers, the Internet.			
SPECIFIC OUTCOME 2 - Describe the hardware components of a personal computer.			
1. The Central Processing Unit (CPU) is described in terms of its purpose and functions.			

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2. The Memory of a personal computer is defined in terms of memory size, the types of memory and their purpose. RANGE - At least two of: Memory types: RAM, ROM, ROM-BIOS, Video memory, PROM.			
3. Input devices are identified and described in terms of their purpose and functions. RANGE - At least six of: Mouse, keyboard, trackball, microphone, touchpad, light pen, scanner, joystick, digital camera.			
4. Output devices are identified and described in terms of the variety, their purpose and functions. RANGE - At least four of: Monitors (Visual Display Units (VDU)), printers, plotters, speakers, speech synthesisers, microfilm (microfiche).			
5. Input/output devices are identified and described in terms of their purpose and function. RANGE - Touchscreen, modem.			
6. Storage devices are identified and described in terms of their purpose, capacity and functioning. RANGE - At least three of: Floppy/stiffy disks, hard disks, magnetic tape streamers, CD-ROM, ZIP drives and cartridges, flash disks.			
SPECIFIC OUTCOME 3 - Describe software for personal computers.			
1. The types of software are described in terms of purpose. RANGE - Operating system software, applications software.			
2. Operating system software is defined in terms of its function, providing examples of current OS software commonly in use. RANGE - Functions include but not limited to: Interface to hardware, interface between application software, interface to printing.OS software include but is not limited to: MS Windows, UNIX, Lunix, Macintosh.			
3. Applications software is defined and examples of applications software types and the specific application for each is described. RANGE - At least 3 of: word processing, spreadsheets, database, presentation, desktop publishing, multimedia applications, internet applications.			
SPECIFIC OUTCOME 4 - Describe information networks in relation to ICT.			
1. "Data communication" is defined in terms of its different forms of data communication and examples given.			
2. The networking of computers are explained in terms of its use, advantages and disadvantages.			
3. The terms LAN and WAN are explained in terms of their scope and usage. RANGE - Distinguish between same graphical area and wide spread area.			
4. Different types of telephone network connections used for access to the Internet are explained with examples. RANGE - Any 2 of: Analogue (Pulse), Digital (Tone), ADSL (Direct), Wireless.			

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SPECIFIC OUTCOME 5 - Describe ergonomic principles for computer workstations.			
1. The ergonomic principles for computer workstations are explained in terms of their application and purpose.			
2. Environmental conditions relating to ergonomics of computer workstations are explained in terms of their impact on personal well-being. RANGE - At least two of the following: environmental conditions: lighting, ventilation, VDU positioning, VDU glare, seating, position and use of input devices (e.g. keyboard, mouse), breaks away from the computer.			
SPECIFIC OUTCOME 6 - Explain health and safety when working with computers.			
1. Current legislation related to health and safety in the ICT environment are identified and explained with examples.			
2. Personal injuries related to incorrect ergonomics when working with computers are explained with examples. RANGE - At least two of the following: back pain, neck pain, repetitive strain injury (RSI), eye strain.			
3. Common precautions that can be taken when working with computers are explained in terms of how they ensure safe working environment. RANGE - At least two of the following: trailing power leads and/or cables, insecure power leads, worn or frayed power leads, overloaded power points.			
4. ICT working practices are explained in terms of ways to minimise the effect of working practices on the immediate environment. RANGE - At least two of the following: recycling paper, recycling ink/toner cartridges, redundant peripheral devices, low power options on devices, use of "standby" or "sleep" modes for devices, digital formats for communication and storage of documents. Effects can be harmful or positive.			
SPECIFIC OUTCOME 7 - A computer workstation is set up taking ergonomic principles and health and safety issues into account.			
1. The computer workstation is set up taking ergonomic principles into account. RANGE - Ergonomic principles include but are not limited to: lighting, VDU position, seating, position and use of input devices (e.g. keyboard, mouse).			
2. A computer workstation is set up taking health and safety issues into account. RANGE - Health and safety issues include but are not limited to: Power leads, cables, power points.			
Unit standard essential embedded knowledge	**----------**	**----------**	**----------**

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• Performance of all elements is to be carried out in accordance with organisation standards and procedures, unless otherwise stated. Organisation standards and procedures may cover: quality assurance, documentation, security, communication, health and safety, and personal behaviour.			
• Performance of all elements complies with the laws of the country operating in, especially with regard to copyright, privacy, health and safety, and consumer rights.			
• All activities must comply with any policies, procedures and requirements of the organisations involved, the ethical codes of relevant professional bodies and any relevant legislative and/ or regulatory requirements.			
• Performance of all elements is to be completed within the normal range of time and cost that would be expected in a professional environment (e.g. In a commercial or government organisation).			
• Organisations in South Africa responsible for standards for health and safety when working with computers is identified such as SABS.			
Critical Cross-field Outcomes (CCFO)	**----------**	**----------**	**----------**
IDENTIFYING - Identify and solve problems in which responses display that decisions using critical and creative thinking have been made by understanding the impact of using a computer in an unsafe manner.			
ORGANISING - Organise and manage oneself and one`s activities responsibly and effectively by ensuring that the correct ergonomic structures are in place before using a computer.			
SCIENCE - Use science and technology effectively and critically, showing responsibility towards the environment and health of others by using a computer in a safe and secure manner.			

Breakdown of notional hours

Learning unit	Contact session 30%		Experiential learning and assessments 70%			Total
	Theory	Practical	Job-related exercises	Assessment preparation	Assessments	
Learning unit	Hours	Hours	Hours	Hours	Hours	Hours
1	3	3	4	2	3	15
2	3	3	4	2	3	15
Totals	**6**	**6**	**8**	**4**	**6**	**30**