



REPUBLIC OF KENYA

NATIONAL OCCUPATIONAL STANDARDS

FOR

ICT ASSISTANT

LEVEL 4



TVET CDACC
P.O. BOX 15745-00100
NAIROBI

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FOREWORD

The provision of quality education and training is fundamental to the Government's overall strategy for social economic development. Quality education and training will contribute to achievement Kenya's development blue print and sustainable development goals.

Reforms in the education sector are necessary for the achievement of Kenya Vision 2030 and meeting the provisions of the Constitution of Kenya 2010. The education sector had to be aligned to the Constitution and this resulted to the formulation of the Policy Framework for Reforming Education and Training. A key feature of this policy is the radical change in the design and delivery of the TVET training. This policy document requires that training in TVET be competency based, curriculum development be industry led, certification be based on demonstration of competence and mode of delivery allows for multiple entry and exit in TVET programmes.

These reforms demand that Industry takes a leading role in curriculum development to ensure the curriculum addresses its competence needs. It is against this background that these Occupational Standards were developed for the purpose of developing a competency-based curriculum for ICT Level 4. These Occupational Standards will also be the bases for assessment of an individual for competence certification.

It is my conviction that these Occupational Standards will play a great role towards development of competent human resource for the interior design sector's growth and sustainable development.

**PRINCIPAL SECRETARY, VOCATIONAL AND TECHNICAL TRAINING
MINISTRY OF EDUCATION**

PREFACE

Kenya Vision 2030 aims to transform the country into a newly industrializing, “middle-income country providing a high-quality life to all its citizens by the year 2030”. Kenya intends to create a globally competitive and adaptive human resource base to meet the requirements of a rapidly industrializing economy through life-long education and training. TVET has a responsibility of facilitating the process of inculcating knowledge, skills and attitudes necessary for catapulting the nation to a globally competitive country, hence the paradigm shift to embrace Competency Based Education and Training (CBET).

The Technical and Vocational Education and Training Act No. 29 of 2013 on Reforming Education and Training in Kenya, emphasized the need to reform curriculum development, assessment and certification. This called for shift to CBET to address the mismatch between skills acquired through training and skills needed by industry as well as increase the global competitiveness of Kenyan labour force.

The TVET Curriculum Development, Assessment and Certification Council (TVET CDACC), in conjunction with ICT Sector Skills Advisory Committee (SSAC), have developed these Occupational Standards for ICT Artisan. These occupational standards will be the bases for development of competency-based curriculum for ICT Level 4. These standards will also be the bases for assessment of an individual for competence certification.

The occupational standards are designed and organized with clear performance criteria for each element of a unit of competency. These standards also outline the required knowledge and skills as well as evidence guide.

I am grateful to the Council Members, Council Secretariat, ICT SSAC, expert workers and all those who participated in the development of these occupational standards.

Prof. CHARLES M. M. ONDIEKI, PhD, FIET (K), Con. Eng. Tech.
CHAIRMAN, TVET CDACC

ACKNOWLEDGMENT

These Occupational Standards were developed through combined effort of various stakeholders from private and public organizations. I am sincerely thankful to the management of these organizations for allowing their staff to participate in this course. I wish to acknowledge the invaluable contribution of industry players who provided inputs towards the development of these Standards.

I thank TVET Curriculum Development, Assessment and Certification Council (TVET CDACC) for providing guidance on the development of these Standards. My gratitude goes to the ICT Sector Skills Advisory Committee (SSAC) members for their contribution to the development of these Standards. I thank all the individuals and organizations who participated in the validation of these Standards.

I acknowledge all other institutions which in one way or another contributed to the development of these Standards.

CHAIRMAN
ICT SECTOR SKILLS ADVISORY COMMITTEE

ACRONYMS

BC	: Basic Competency
CDACC	: Curriculum Development, Assessment and Certification Council
CR	: Core Competency
ICT	: Information Communication Technology
KNQA	: Kenya National Qualifications Authority
OS	: Occupational Standards
OSHA	: Occupation Safety and Health Act
OSHS	: Occupation Safety and Health Standards
PPE	: Personal Protective Equipment
SSAC	: Sector Skills Advisory Committee
TVET	: Technical and Vocational Education and Training

KEY TO UNIT CODE

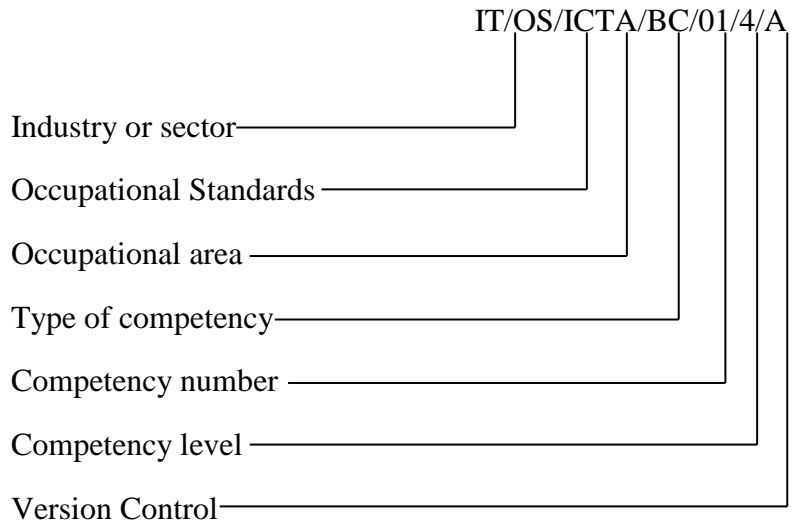


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OVERVIEW

ICT level 4 consists of competencies that an individual must achieve to be competent. It entails; Use of ICT devices, Installing Computer Software, Repair and maintaining a Computer, apply Microsoft Office tools and use of the internet. This qualification consists of the following basic and core competencies:

BASIC COMPETENCIES

Unit of learning code	Unit of learning title
IT/OS/ICTA/BC/01/4/A	Demonstrate communication skills
IT/OS/ICTA/BC/02/4/A	Demonstrate numeracy skills
IT/OS/ICTA/BC/03/4/A	Demonstrate digital literacy
IT/OS/ICTA/BC/04/4/A	Demonstrate entrepreneurial skills
IT/OS/ICTA/BC/05/4/A	Demonstrate employability skills
IT/OS/ICTA/BC/06/4/A	Demonstrate environmental literacy
IT/OS/ICTA/BC/07/4/A	Demonstrate occupational safety and health practices

CORE COMPETENCIES

Unit code	Unit title
IT/OS/ICTA/CC/01/4/A	Use ICT Devices
IT/OS/ICTA/CC/02/4/A	Install Computer Software
IT/OS/ICTA/CC/03/4/A	Repair and Maintain a Computer
IT/OS/ICTA/CC/04/4/A	Apply Microsoft Office Tools
IT/OS/ICTA/CC/05/4/A	Use the Internet

BASIC UNITS OF COMPETENCY

DEMONSTRATE COMMUNICATION SKILLS

UNIT CODE: IT/OS/ICTA/BC/01/4/A

UNIT DESCRIPTION

This unit covers the competencies required to gather, interpret and convey information in response to workplace requirements and to lead in the dissemination and discussion of ideas, information and issues in the workplace.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace function	These are assessable statements which specify the required level of performance for each of the elements. <i>Bold and italicized terms are elaborated in the Range</i>
1. Obtain and convey workplace information	1.1 Specific and relevant information is accessed from <i>appropriate sources</i> 1.2 Effective questioning, active listening and speaking skills are used to gather and convey information 1.3 Appropriate <i>medium</i> is used to transfer information and ideas 1.4 Appropriate non- verbal communication is used 1.5 Appropriate lines of communication with supervisors and colleagues are identified and followed 1.6 Defined workplace procedures for the location and <i>storage</i> of information are used 1.7 Personal interaction is carried out clearly and concisely
2. Complete relevant work-related documents	2.1 Range of forms relating to conditions of employment are completed accurately and legibly 2.2 Workplace data is recorded on standard workplace forms and documents 2.3 Basic mathematical processes are used for routine calculations 2.4 Errors in recording information on forms/ documents are identified and properly acted upon 2.5 Reporting requirements to supervisor are completed according to organizational guidelines
3. Communicate information	2.1 Appropriate method of communication is selected

about workplace processes	<p>2.2 Multiple operations involving several topics areas are communicated accordingly</p> <p>2.3 Questions are used to gain extra information</p> <p>2.4 Correct sources of information are identified</p> <p>2.5 Information is selected and organized correctly</p> <p>2.6 Verbal and written reporting is undertaken when required</p> <p>2.7 Communication skills are maintained in all situations</p>
4. Lead workplace discussion	<p>2.8 Response to workplace issues are sought</p> <p>2.9 Response to workplace issues are provided immediately</p> <p>2.10 Constructive contributions are made to workplace discussions on such issues as production, quality and safety</p> <p>2.11 Goals/objectives and action plan undertaken in the workplace are communicated accordingly</p>
5. Identify and communicate issues arising in the workplace	<p>3.1 Issues and problems are identified as they arise</p> <p>3.2 Information regarding problems and issues are organized coherently to ensure clear and effective communication</p> <p>3.3 Dialogue is initiated with appropriate personnel</p> <p>3.4 Communication problems and issues are raised as they arise</p>

RANGE

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

Variable	Range
<i>Methods of communication</i> include but not limited to:	<p>1.1. Non-verbal gestures</p> <p>1.2. Verbal</p> <p>1.3. Face to face</p> <p>1.4. Two-way radio</p> <p>1.5. Speaking to groups</p> <p>1.6. Using telephone</p> <p>1.7. Written</p> <p>1.8. Internet</p>
<i>Workplace discussion</i> include but not limited to:	<p>2.1. Coordination meetings</p>

	2.2. Toolbox discussion 2.3. Peer-to-peer discussion
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REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Organize information
- Understand and convey intended meaning
- Participate in variety of workplace discussions
- Comply with organization requirements for the use of written and electronic communication methods
- Effective report writing
- Effective clarifying and probing skills

Required Knowledge

The individual needs to demonstrate knowledge of:

- Organization requirements for written and electronic communication methods
- Effective verbal communication methods
- Report writing
- Effective questioning techniques (clarifying and probing)
- Workplace etiquette

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Dealt with a range of communication/information at one time</p> <p>1.2 Made constructive contributions in workplace issues</p> <p>1.3 Sought workplace issues effectively</p> <p>1.4 Responded to workplace issues promptly</p> <p>1.5 Presented information clearly and effectively in written form</p> <p>1.6 Used appropriate sources of information</p>
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	<p>1.7 Asked appropriate questions</p> <p>1.8 Provided accurate information</p>
2. Resource Implications	<p>The following resources should be provided:</p> <p>2.1 Variety of Information</p> <p>2.2 Communication tools</p> <p>2.3 Simulated workplace</p>
3. Methods of Assessment	<p>3.1 Case Study</p> <p>3.2 Third-party reports</p> <p>3.3 Portfolio</p> <p>3.4 Interview</p> <p>3.5 Role Play</p>
4. Context of Assessment	<p>Competency may be assessed individually in the actual workplace or through accredited institution</p>
5. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>

DEMONSTRATE NUMERACY SKILLS

UNIT CODE: IT/OS/ICTA/BC/02/4/A

UNIT DESCRIPTION

This unit covers the competencies required to perform numerical functions. The person who is competent in this unit shall be able to: Identify and use whole numbers and simple fractions, decimals and percentages; Identify, measure and estimate familiar quantities for work, Read and use familiar maps, plans and diagrams for work, Identify and describe common 2D and some 3D shapes for work, Construct simple tables and graphs for work using familiar data, Identify and interpret information in familiar tables, graphs and charts for work.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace function.	These are assessable statements which specify the required level of performance for each of the elements. <i>Bold and italicized terms are elaborated in the Range.</i>
1. Identify and use whole numbers and simple fractions, decimals and percentages for work	1.1 Simple fractions, decimals and percentages identified and interpreted 1.2 understanding of place value by organising numbers from smallest to largest demonstrated 1.3 Required numerical information located and decision made on appropriate method to solve a problem 1.4 Limited range of calculations performed using the 4 operations 1.5 Links between operations described 1.6 Estimations made to check reasonableness of results of problem solving process 1.7 Numerical information recorded, and the result of the task communicated using informal and some formal language and symbolism

<p>2. Identify, measure and estimate familiar quantities for work</p>	<p>2.1 Measurement information in workplace tasks and texts identified and interpreted</p> <p>2.2 Familiar units of measurement needed for tasks is identified</p> <p>2.3 Familiar and simple amounts estimated</p> <p>2.4 Appropriate measuring equipment selected</p> <p>2.5 Simple measuring equipment graduated in familiar units to measure relevant quantities is used</p> <p>2.6 Calculation done using familiar units of measurement</p> <p>2.7 measurements and results checked against estimates</p> <p>2.8 Results are recorded or reported</p> <p>2.9 Results relevant to the workplace task are communicated using informal and some formal mathematical and general language</p>
<p>3. Read and use familiar maps, plans and diagrams for work</p>	<p>3.1 Items and places are in familiar maps, plans and diagrams</p> <p>3.2 Common symbols and keys recognised in familiar maps, plans and diagrams</p> <p>3.3 Understanding of direction and location demonstrated by describing the location of objects, or route to familiar places</p> <p>3.4 Instructions to locate familiar objects or places are given and followed</p> <p>3.5 Informal and some formal oral mathematical language and symbols are used</p>
<p>4. Identify and describe common 2D and some 3D shapes for work</p>	<p>4.1 Common 2D shapes and some common 3D shapes in familiar situations are identified and named</p> <p>4.2 Common 2D shapes and designs are compared and classified</p> <p>4.3 Informal and some formal language used to describe common two-dimensional shapes and some common three-dimensional shapes</p> <p>4.4 Simple items used to draw or construct common 2D shapes</p> <p>4.5 Common 3D shapes matched to their 2D sketches or nets</p>

5. Construct simple tables and graphs for work using familiar data	5.1 Common types of graphs are identified and named 5.2 Familiar data to be collected is determined 5.3 A method to collect data is selected 5.4 A small amount of simple familiar data is collected 5.5 One or two variables determined from the data collected 5.6 Data ordered and collated 5.7 A table constructed, and data enter 5.8 Graphs are constructed using data from table 5.9 Results are promptly checked 5.10 Graph information related to work is reported or discussed using informal and some formal mathematical and general language
6. Identify and interpret information in familiar tables, graphs and charts for work	6.1 Simple tables are identified in familiar texts and contexts 6.2 Title, headings, rows and columns located in familiar tables 6.3 Information and data in simple tables identified and interpreted 6.4 Information is related to relevant workplace tasks 6.5 Familiar graphs and charts are identified in familiar texts and contexts 6.6 Title, labels, axes, scale and key from familiar graphs and charts are located 6.7 Information and data in familiar graphs and charts is identified and interpreted 6.8 Information related to relevant workplace tasks

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	Range
1. Simple measuring equipment	May include but not limited to: 1.1 Rulers 1.2 Watches/clocks 1.3 Scales 1.4 Thermometers 1.5 AVO meter

2. Common 2D shapes and common 3D shapes	May include but not limited to: <ul style="list-style-type: none"> 2.1 Round 2.2 Square 2.3 Rectangular 2.4 Triangle 2.5 Sphere 2.6 Cylinder 2.7 Cube 2.8 Polygons 2.9 Cuboids
3. Diagrammatical representation	May include but not limited to: <ul style="list-style-type: none"> • Charts • Maps • Graphs

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Applying Fundamental operations (addition, subtraction, division, multiplication)
- Using calculator
- Using different measuring tools

Required knowledge

The individual needs to demonstrate knowledge of:

- Types of common shapes
- Differentiation between two dimensional shapes / objects
- Formulae for calculating area and volume
- Types and purpose of measuring instruments
- Units of measurement and abbreviations
- Fundamental operations (addition, subtraction, division, multiplication)
- Rounding techniques
- Types of fractions
- Different types of tables and graphs
- Meaning of graphs, such as increasing, decreasing, and constant value

- Preparation of basic data, tables & graphs

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Simple fractions, decimals and percentages are correctly identified and interpreted</p> <p>1.2 Performed a limited range of calculations using the 4 operations</p> <p>1.3 Performed calculations using familiar units of measurement</p> <p>1.4 Recognised common symbols and keys in familiar maps, plans and diagrams</p> <p>1.5 Constructed simple tables and graphs using familiar data</p> <p>1.6 Identified and interpret information in familiar tables, graphs and charts</p>
2. Resource Implications	<p>2.1 Calculator</p> <p>2.2 Basic measuring instruments</p>
3. Methods of Assessment	<p>Competency may be assessed through:</p> <p>3.1 Written Test</p> <p>3.2 Interview/Oral Questioning</p> <p>3.3 Demonstration</p>
4. Context of Assessment	<p>Competency may be assessed in an off the job setting</p>
5. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>

DEMONSTRATE DIGITAL LITERACY

UNIT CODE: IT/OS/ICTA/BC/03/4/A

UNIT DESCRIPTION

This unit covers the competencies required to effectively demonstrate digital literacy in a working environment. It entails identifying and using digital devices such as smartphones, tablets, laptops and desktop PCs for purposes of communication and performing work related tasks at the work place.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace function	These are assessable statements which specify the required level of performance for each of the elements. <i>Bold and italicized terms are elaborated in the Range</i>
1. Identify computer software and hardware	1.1 <i>Appropriate computer software</i> is identified according to manufacturer's specification 1.2 <i>Appropriate computer hardware</i> is identified according to manufacturer's specification
2. Apply security measures to data, hardware, software	2.1 <i>Data security and privacy are classified</i> in accordance with the technological situation 2.2 <i>Security and control measures</i> are applied in accordance with laws governing protection of ICT 2.3 Computer threats and crimes are detected. 2.4 Protection against computer crimes is undertaken in accordance with laws governing protection of ICT
3. Apply computer software in solving tasks	3.1 Basic <i>word processing concepts</i> are applied in resolving workplace tasks 3.2 <i>Word processing utilities</i> are applied in accordance with workplace procedures 3.3 Data is manipulated on worksheet in accordance with office procedures
4. Apply internet and email in communication at workplace	4.1 Electronic mail is applied in workplace communication in accordance with office procedures 4.2 Office internet functions are defined and executed in accordance with office procedures 4.3 <i>Network configuration</i> and uses are determined in accordance with office operations procedures

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Range	Variable
<i>Appropriate computer software</i> may include but not limited to:	<ul style="list-style-type: none">• A collection of instructions that enable the user to interact with a <i>computer</i>, its hardware, or perform tasks.• Computer tools that will help <i>computer</i> users interact with the hardware in a <i>computer</i>.
<i>Appropriate computer hardware</i> may include but not limited to:	Collection of physical parts of a computer system. This includes the computer case, monitor, keyboard, and mouse and all the parts inside the computer case, such as the hard disk drive, motherboard, video card,
<i>Data security and privacy</i> may include but not limited to:	<ul style="list-style-type: none">• Confidentiality• Cloud computing• Confidentiality• Cyber terrorism• Integrity -but-curious data serving
<i>Security and control measures</i> may include but not limited to:	<ul style="list-style-type: none">• Countermeasures and risk reduction• Cyber threat issues• Risk management
<i>Word processing concepts</i> may include but not limited to:	Using a special program to create, edit, and print documents
<i>Network configuration</i> may include but not limited to:	Organizing and maintaining information on the components of a computer network

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Analytical skills
- Interpretation
- Typing
- Communication

- Computing (applying fundamental operations such as addition, subtraction, division and multiplication)
- Using calculator
- Basic ICT skills

Required Knowledge

The individual needs to demonstrate knowledge of:

- Input and output devices
- Central processing Unit (CPU)
- Peripherals
- Storage Media
- Software concept
- Types of concept
- Function of computer software
- Data security and privacy
- Security threats and control measures
- Computer crimes
- Detection and protection of computer crimes
- Laws governing protection of ICT
- Word processing;
 - Functions and concepts of word processing.
 - Documents and tables creation and manipulations
 - Mail merging
 - Word processing utilities
- Spread sheet;
 - Meaning, formulae, function and charts, uses, layout, data manipulation and application to cell
- Networking and Internet;
 - Meaning, functions and uses of networking and internet.
 - Electronic mail and world wide web
- Emerging trends and issues in ICT;
 - Identify and apply emerging trends and issues in ICT
 - Challenges posed by emerging trends and issues

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate:
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	<ul style="list-style-type: none"> 1.1 Identified input, output, CPU and storage media devices of computers in accordance to computer specification 1.2 Identified concepts, types and functions of computer software according to operation manual 1.3 Identified and controlled security threats 1.4 Detected and protected computer crimes 1.5 Applied word processing in office tasks 1.6 Prepared work sheet and applied data to the cells in accordance to workplace procedures 1.7 Used Electronic Mail for office communication as per workplace procedure 1.8 Applied internet and World Wide Web for office tasks in accordance with office procedures 1.9 Applied laws governing protection of ICT
2. Resource Implications	<ul style="list-style-type: none"> 2.1 Smartphones 2.2 Tablets 2.3 Laptops and 2.4 Desktop PCs 2.5 Desktop computer 2.6 Lap top 2.7 Calculator 2.8 Internet 2.9 Smart phone 2.10 Operations Manuals
3. Methods of Assessment	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Written Test 3.2 Demonstration 3.3 Practical assignment 3.4 Interview/Oral Questioning 3.5 Demonstration
4. Context of Assessment	Competency may be assessed in an off and on the job setting
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

DEMONSTRATE ENTREPRENEURIAL SKILLS

UNIT CODE: IT/OS/ICTA/BC/04/4/A

UNIT DESCRIPTION

This unit covers the competencies required for creating and maintaining small scale business, establishing small business customer base, managing and growing a micro/small-scale business.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace function.	These are assessable statements which specify the required level of performance for each of the elements. <i>Bold and italicized terms are elaborated in the Range</i>
1. Create and maintain small-scale business	1.1 Generation and evaluation of business ideas is undertaken in accordance with the existing procedure 1.2 Competencies are matched with business opportunities in accordance with business practices. 1.3 Procedure for starting a small business is identified as per the legal requirements 1.4 SWOT/ PESTEL analysis and or industrial survey is carried out according to office procedures 1.5 Business operations are monitored and controlled following established procedures. 1.6 Quality assurance measures are implemented consistently. 1.7 Good relations are maintained with staff/workers. 1.8 Policies and procedures on occupational safety and health and environmental concerns are constantly observed.
2. Establish small business customer base	2.1 Good customer relations are maintained in accordance with office procedures 2.2 New customers and markets are identified, explored and reached out to according to the marketing plan 2.3 Promotions/Incentives are offered to loyal customers in accordance with office procedures 2.4 Additional products and services are evaluated and tried in accordance with marketing strategy

	2.5 Customer record is maintained in accordance with office procedures
3. Manage small scale business	<p>3.1 Enterprise is built up and sustained through judicious control of cash flows.</p> <p>3.2 Profitability of enterprise is ensured through appropriate internal controls.</p> <p>3.3 Unnecessary or lower-priority expenses and purchases are avoided to ensure profitability</p> <p>3.4 Basic cost-benefit analysis are undertaken in accordance with office procedures</p> <p>3.5 Basic financial management are undertaken in accordance with office procedures</p> <p>3.6 Basic financial accounting is undertaken in accordance with office procedures</p> <p>3.7 Business internal controls are implemented in accordance with office procedure</p> <p>3.8 Setting business priorities and strategies is carried out according to office procedures</p> <p>3.9 Preparation and interpretation of basic financial statements is undertaken in accordance with set procedures</p> <p>3.10 <i>Preparation of business plans</i> for small business is undertaken in accordance with business strategy</p> <p>3.11 Business Social Responsibility is maintained in accordance with Standard Operations Procedures (SOP)</p>
4. Grow/ expand small scale business	<p>4.1 Prepared business growth strategy for small scale business in accordance with office procedures</p> <p>4.2 Incorporated technology in small scale business growth in accordance with technological trends</p> <p>4.3 Emerging issues and trends are considered in accordance with business growth strategy</p> <p>4.4 Built audience interest in product/service according to growth strategy</p> <p>4.5 Boosted cooperative communication according to business communication strategy</p>

RANGE

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

Variable	Range
Business Strategy include but not limited to:	Manage wastages, environmental conservation
Business Operations include but not limited to:	<ul style="list-style-type: none"> • Purchasing • Accounting/administrative • Work production/operations/sales • Marketing
Internal control includes but not limited to:	<ul style="list-style-type: none"> • Accounting systems • Financial statements/reports • Cash management • Human resource management
Profitability of enterprise include but not limited to:	Operating expenses lower than income
Communication strategy include but not limited to:	<ul style="list-style-type: none"> • Blue print of exchange of information • Technology and exchange of information

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Individual marketing skills
- Using basic advertising (posters/ tarpaulins, flyers, social media,
- Basic bookkeeping/ accounting skills
- Communication skills

Required Knowledge

The individual needs to demonstrate knowledge of:

- Generation and evaluation of business ideas
- Legal requirements for starting a small business
- SWOT/ PESTEL analysis
- Occupational Safety and Health

- Public relations concepts
- Business plan
- Business financing
- Marketing strategies
- Business management and control
- Production/ operation process
- Product promotion strategies
- Market and feasibility studies
- Business ethics
- Building customer relations
- Business models and strategies
- Types and categories of businesses
- Business internal controls
- Relevant national and local legislation and regulations
- Basic quality control and assurance concepts
- Building relations with customer and employees
- Building competitive advantage of the enterprise
- Business growth strategies

EVIDENCE GUIDE

<p>1. Critical aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Demonstrated entrepreneurial skills 1.2 Demonstrate competencies to create a small-scale business 1.2 Demonstrated ability to conceptualize and plan a micro/small business 1.3 Grew customer base for the small-scale business 1.3 Demonstrated ability to manage/operate a micro/small-scale business 1.4 Demonstrated competencies to grow a micro/small-scale business
<p>2. Resource Implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Case studies on micro/small-scale enterprises 2.2 Materials and location relevant to the proposed activity and tasks

3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Case studies 3.2 Oral Questioning 3.3 Portfolio 3.4 Projects
4. Context of Assessment	4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 Assessment shall be observed while tasks are being undertaken whether individually or in-group
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

DEMONSTRATE EMPLOYABILITY SKILLS

UNIT CODE: IT/OS/ICTA/BC/05/4/A

UNIT DESCRIPTION

This unit covers competencies required to demonstrate employability skills. It involves conducting self-management, demonstrating critical safe work habits, demonstrating workplace learning and workplace ethics.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the key outcomes which make up workplace function.	PERFORMANCE CRITERIA These are assessable statements which specify the required level of performance for each of the elements. <i>Bold and italicized terms are elaborated in the Range</i>
1. Conduct self-management	1.1 Personal vision, mission and goals are formulated based on potential and in relation to organization objectives 1.2 Emotions are managed as per workplace requirements 1.3 Individual performance is evaluated and monitored according to the agreed targets. 1.4 Assertiveness is developed and maintained based on the requirements of the job. 1.5 Accountability and responsibility for own actions are demonstrated. 1.6 Self-esteem and a positive self-image are developed and maintained. 1.7 Time management, attendance and punctuality are observed as per the organization policy. 1.8 Goals are managed as per the organization's objective 1.9 Self-strengths and weaknesses are identified as per <i>personal objectives</i> 1.10 Critics are managed as per personal objectives 1.11 Demonstrate interpersonal communication 1.12 Information is shared as per communication structure 1.13 Work activity is organized with other involved personnel as per the SOPs

<p>2. Demonstrate critical safe work habits</p>	<p>2.1 Stress is managed in accordance with workplace procedures.</p> <p>2.2 Punctuality and time consciousness is demonstrated in line with workplace policy.</p> <p>2.3 Personal objectives are integrated with organization goals based on organization’s strategic plan.</p> <p>2.4 Work priorities are set in accordance to workplace procedures.</p> <p>2.5 Feedback on performance is collected and evaluated based on established team learning process</p> <p>2.6 Leisure time is recognized in line with organization policy.</p> <p>2.7 Abstinence from drug and substance abuse is observed as per workplace policy.</p> <p>2.8 Awareness of HIV and AIDS is demonstrated in line with workplace requirements.</p> <p>2.9 Safety consciousness is demonstrated in the workplace based on organization safety policy.</p> <p>2.10 Emerging issues are dealt with in accordance with organization policy.</p>
<p>3. Demonstrate workplace learning</p>	<p>3.1 Personal training needs are identified and assessed in line with the requirements of the job</p> <p>3.2 Own learning is managed as per workplace policy.</p> <p>3.3 Learning opportunities are sought and allocated based on job requirement and in line with organization policy.</p> <p>3.4 Contribution to the learning community at the workplace is carried out.</p> <p>3.5 Range of media for learning are identified as per the training need</p> <p>3.6 Application of learning is demonstrated in both technical and non-technical aspects based on requirements of the job</p> <p>3.7 Enthusiasm for ongoing learning is demonstrated</p> <p>3.8 Time and effort is invested in learning new skills-based job requirements</p> <p>3.9 Willingness to learn in different context is demonstrated based on available learning opportunities arising in the workplace.</p> <p>3.10 Opportunities for performance improvement are identified proactively in area of work.</p> <p>3.11 Awareness of personal role in workplace innovation is demonstrated.</p>

4. Demonstrate workplace ethics	4.1 Policies and guidelines are observed as per the workplace requirements 4.2 Self-worth and profession is exercised in line with personal goals and organizational policies 4.3 Code of conduct is observed as per the workplace requirements 4.4 Personal and professional integrity is demonstrated as per the personal goals 4.5 Commitment to jurisdictional laws is demonstrated as per the workplace requirements
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RANGE

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

Range	Variable
<i>Drug and substance abuse</i> includes but not limited to:	Commonly abused <ul style="list-style-type: none"> • Alcohol • Tobacco • Miraa • Over-the-counter drugs • Cocaine • Bhang • Glue
<i>Feedback</i> includes but not limited to:	<ul style="list-style-type: none"> • Verbal • Written • Informal • Formal
<i>Team</i> includes but not limited to:	<ul style="list-style-type: none"> • Small work group • Staff in a section/department • Inter-agency group
<i>Personal objectives</i> include but not limited to:	<ul style="list-style-type: none"> • Long term • Short term • Broad • Specific
<i>Innovation</i> include but not limited to:	<ul style="list-style-type: none"> • New ideas • Original ideas

	<ul style="list-style-type: none"> • Different ideas • Methods/procedures • Processes • New tools
<i>Emerging issues</i> include but not limited to:	<ul style="list-style-type: none"> • Terrorism • Social media • National cohesion • Open offices
<i>Range of media for learning</i> include but not limited to:	<ul style="list-style-type: none"> • Mentoring • peer support and networking • IT and courses

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Personal hygiene practices
- Intra and Interpersonal skills
- Communication skills
- Knowledge management
- Interpersonal skills
- Critical thinking skills
- Observation skills
- Organizing skills
- Negotiation skills
- Monitoring skills
- Evaluation skills
- Record keeping skills
- Problem solving skills
- Decision Making skills
- Resource utilization skills
- Resource mobilization skills

Required Knowledge

The individual needs to demonstrate knowledge of:

- Work values and ethics

- Company policies
- Company operations, procedures and standards
- Occupational Health and safety procedures
- Fundamental rights at work
- Personal hygiene practices
- Workplace communication
- Concept of time
- Time management
- Decision making
- Types of resources
- Work planning
- Resources and allocating resources
- Organizing work
- Monitoring and evaluation
- Record keeping
- Workplace problems and how to deal with them
- Negotiation
- Assertiveness
- Team work
- Gender mainstreaming
- HIV and AIDS
- Drug and substance abuse
- Leadership
- Safe work habits
- Professional growth and development
- Technology in the workplace
- Learning
- Creativity
- Innovation
- Emerging issues
 - Social media
 - Terrorism
 - National cohesion

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1 Conducted self-management 1.2 Demonstrated critical safe work habits 1.3 Demonstrated workplace learning 1.4 Demonstrated workplace ethics
2. Resource Implications	The following resources should be provided: 2.1 Case studies/scenarios
3. Methods of Assessment	Competency in this unit may be assessed through: <ul style="list-style-type: none">• Oral Interview• Observation• Third Party Reports• Written
4. Context of Assessment	4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 Assessment shall be observed while tasks are being undertaken whether individually or in-group
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

DEMONSTRATE ENVIRONMENTAL LITERACY

UNIT CODE: IT/OS/ICTA/BC/06/4/A

UNIT DESCRIPTION

This unit specifies the competencies required to follow procedures for environmental hazard control, follow procedures for environmental pollution control, comply with workplace sustainable resource use and evaluate current practices in relation to resource usage.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace function.	These are assessable statements which specify the required level of performance for each of the elements. <i>Bold and italicized terms are elaborated in the Range</i>
1. Control environmental hazard	1.1 <i>Storage methods</i> for environmentally hazardous materials are strictly followed according to environmental regulations and OSHS. 1.2 <i>Disposal methods</i> of hazardous wastes are followed always according to environmental regulations and OSHS. 1.3 <i>PPE</i> is used according to OSHS.
2. Control environmental Pollution control	2.1 Environmental pollution <i>control measures</i> are compiled following standard protocol. 2.2 Procedures for solid waste management are observed according Environmental Management and Coordination Act 1999 2.3 Methods for minimizing <i>noise pollution</i> complied following environmental regulations.
3. Demonstrate sustainable resource use	3.1 Methods for minimizing wastage are complied with. 3.2 Waste management procedures are employed following principles of 3Rs (Reduce, Reuse, Recycle) 3.3 Methods for economizing or reducing resource consumption are practiced.
4. Evaluate current practices in relation to resource usage	4.1 Information on resource efficiency <i>systems and procedures</i> are collected and provided to the work group where appropriate.

	<p>4.2 Current resource usage is measured and recorded by members of the work group.</p> <p>4.3 Current purchasing strategies are analyzed and recorded according to industry procedures.</p> <p>4.4 Current work processes to access information and data is analyzed following enterprise protocol.</p>
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RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	Range
1. PPE may include but are not limited to:	<p>1.1 Masks</p> <p>1.2 Gloves</p> <p>1.3 Goggles</p> <p>1.4 Safety hat</p> <p>1.5 Overall</p> <p>1.6 Hearing protector</p> <p>1.7 Safety boots</p>
2. Environmental pollution control measures may include but are not limited to:	<ul style="list-style-type: none"> • Methods for minimizing or stopping spread and ingestion of airborne particles • Methods for minimizing or stopping spread and inhaling gases and fumes • Methods for minimizing or stopping spread and ingestion of liquid wastes
3. Waste management Procedures may include but are not limited to:	<p>3.1 Sorting</p> <p>3.2 Storing of items</p> <p>3.2 Recycling of items</p> <p>3.3 Disposal of items</p> <p>3.4 Handling</p> <p>3.5 Transport</p>
4. Resources may include but are not limited to:	<p>4.1 Electric</p> <p>4.2 Water</p> <p>4.3 Fuel</p> <p>4.3 Telecommunications</p> <p>4.4 Supplies</p> <p>4.5 Materials</p>

5. Workplace environmental hazards may include but are not limited to:	5.1 Biological hazards 5.2 Chemical and dust hazards 5.3 Physical hazards
6. Organizational systems and procedures may include but are not limited to:	7.1 Supply chain, procurement and purchasing 7.2 Quality assurance 7.3 Making recommendations and seeking approvals

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Following storage methods of environmentally hazardous materials
- Following disposal methods of hazardous wastes
- Using PPE
- Practicing OSHS
- Complying environmental pollution control
- Observing solid waste management
- Complying methods of minimizing noise Pollution
- Complying methods of minimizing wastage
- Employing waste management procedures
- Economizing resource consumption
- Listing of resources used
- Measuring current usage of resources
- Identifying and reporting workplace environmental hazards
- Conveying all environmental issues
- Following environmental regulations
- Identifying environmental regulations
- Assessing procedures for assessing compliance
- Collecting information on environmental and resource efficiency systems and procedures, and Providing information to the work group
- Measuring and recording current resource usage
- Analysing and recording current purchasing strategies.
- Analysing current work processes to access information and data and Assisting identifying areas for improvement

Required Knowledge

The individual needs to demonstrate knowledge of:

- Storage methods of environmentally hazardous materials
- Disposal methods of hazardous wastes
- Usage of PPE Environmental regulations
- OSHS
- Types of pollution
- Environmental pollution control measures
- Different solid wastes
- Solid waste management
- Different noise pollution
- Methods of minimizing noise pollution
- Solid Waste Act
- Methods of minimizing wastage
- Waste management procedures
- Economizing of resource consumption
- Principle of 3Rs
- Types of resources
- Techniques in measuring current usage of resources
- Calculating current usage of resources
- Types of workplace environmental hazards
- Environmental regulations
- Environmental regulations applying to the enterprise.
- Procedures for assessing compliance with environmental regulations.
- Collection of information on environmental and resource efficiency systems and procedures,
- Measurement and recording of current resource usage
- Analysis and recording of current purchasing strategies.
- Analysis current work processes to access information and data Analysis of data and information
- Identification of areas for improvement

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Controlled environmental hazard 1.2 Controlled environmental pollution 1.3 Demonstrated sustainable resource use 1.4 Evaluated current practices in relation to resource usage
<p>2. Resource Implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Workplace with storage facilities 2.2 Tools, materials and equipment relevant to the tasks (ex. Cleaning tools, cleaning materials, trash bags, etc.) 2.3 PPE 2.4 Manuals and references 2.5 Legislation, policies, procedures, protocols and local ordinances relating to environmental protection 2.6 Case studies/scenarios relating to environmental Protection
<p>3 Methods of Assessment</p>	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Demonstration 3.2 Oral questioning 3.3 Written examination 3.4 Third Party Reports 3.5 Portfolio (citations/awards from GOs and NGOs, certificate of training – local and abroad) 3.6 Simulations and role-plays
<p>4 Context of Assessment</p>	<p>Competency may be assessed on the job, off the job or a combination of these as well as in work placement (internship). Off the job assessment must be undertaken in a closely simulated workplace environment.</p>
<p>5 Guidance information for assessment</p>	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>

DEMONSTRATE OCUPATIONAL SAFETY AND HEALTH PRACTICES

UNIT CODE: IT/OS/ICTA/BC/07/4/A

UNIT DESCRIPTION

This unit specifies the competencies required to practice safety and health, and comply with OSH requirements relevant to work

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
<p>These describe the key outcomes which make up workplace function.</p>	<p>These are assessable statements which specify the required level of performance for each of the elements.</p> <p><i>Bold and italicized terms are elaborated in the Range</i></p>
<p>1. Observe workplace procedures for hazards and risk prevention</p>	<p>1.1 Arrangement of work area and items in accordance with Company housekeeping procedures is followed</p> <p>1.2 Work standards and procedures are followed</p> <p>1.3 <i>Prevention and control measures</i>, including use of <i>safety gears/PPE</i> are applied</p> <p>1.4 Standards and procedures for <i>incidents and emergencies</i> are studied and applied, as needed</p>
<p>2. Participate in arrangements for workplace safety and health maintenance</p>	<p>2.1 Orientations on <i>OSH requirements/regulations</i> of tasks is participated</p> <p>2.2 Feedback on health, safety, and security concerns are provided to appropriate personnel as required in a sufficiently detailed manner.</p> <p>2.3 Workplace procedures for reporting hazards, incidents, injuries and sickness are practiced</p> <p>2.4 OSH requirements/ regulations and workplace safety and hazard control procedures are reviewed, and compliance reported to appropriate personnel, as needed</p> <p>2.5 Needed <i>OSH-related trainings</i> are identified and proposed to appropriate personnel</p>

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	Range
<p>1. <i>Prevention and control measures</i> may include but are not limited to:</p>	<p>1.1 Eliminate the hazard (i.e., get rid of the dangerous machine)</p> <p>1.2 Isolate the hazard (i.e. keep the machine in a closed room and operate it remotely; barricade an unsafe area off)</p> <p>1.3 Substitute the hazard with a safer alternative (i.e., replace the machine with a safer one)</p> <p>1.4 Use administrative controls to reduce the risk (i.e. give trainings on how to use equipment safely; OSH-related topics, issue warning signages, rotation/shifting work schedule)</p> <p>1.5 Use engineering controls to reduce the risk (i.e. use safety guards to machine)</p> <p>1.6 Use personal protective equipment</p> <p>1.7 Safety, Health and Work Environment Evaluation</p> <p>1.8 Periodic and/or special medical examinations of workers</p>
<p>2. <i>Safety gears /PPE</i> (Personal Protective Equipment's) may include but are not limited to:</p>	<p>2.1 Arm/Hand guard, gloves</p> <p>2.2 Eye protection (goggles, shield)</p> <p>2.3 Hearing protection (ear muffs, ear plugs)</p> <p>2.4 Hair Net/cap/bonnet</p> <p>2.5 Hard hat</p> <p>2.6 Face protection (mask, shield)</p> <p>2.7 Apron/Gown/coverall/jump suit</p> <p>2.8 Anti-static suits</p> <p>2.9 High-visibility reflective vest</p>

<p>3. <i>Incidents and emergencies</i> may include but are not limited to:</p>	<p>3.1 Chemical spills 3.2 Equipment/vehicle accidents 3.3 Explosion 3.4 Fire 3.5 Gas leak 3.6 Injury to personnel 3.7 Structural collapse 3.8 Toxic and/or flammable vapors emission.</p>
<p>4. <i>OSH requirements / regulations</i> may include but are not limited to:</p>	<p>4.2 Building code 4.5 Permit to Operate</p>
<p>5. <i>OSH-related trainings</i> may include but are not limited to:</p>	<p>5.1 Safety Orientations relevant to tasks 5.2 Safe and Correct Operation of Tools and Equipment 5.3 Health Orientations/trainings (Healthy Lifestyle, Prevention of drug/alcohol dependence, violence in the workplace, work-stress) 5.4 Prevention and Control of OSH Hazards in the workplace 5.5 Chemical Handling 5.6 Safety Trainings (Fire Safety, Construction Safety, Confined Space) 5.7 Prevention and Control of Work-related Injuries and Illness 5.8 Basic First-aid Trainings 5.9 Emergency Response Trainings 5.10 Trainings on use of fire-extinguisher</p>

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Communication Skills
- Knowledge management
- Collaborating skills
- Interpersonal Skills
- Troubleshooting skills
- Critical thinking Skills
- Observation Skills

Required Knowledge

The individual needs to demonstrate knowledge of:

- General OSH principles and legislations
- Principles of good housekeeping (5S)
- Company/workplace policies/ guidelines
- Standards and safety requirements of work process and procedures
- Standard Workplace emergency plan and procedures
- Safety and health requirements of tasks
- Workplace guidelines on providing feedback on OSH and security concerns
- OSH regulations
- Hazard control procedures
- OSH trainings relevant to work

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Follows work and housekeeping procedures, and complies with its requirements 1.2 Follows work standards and procedures 1.3 Applies OSH preventive and control measures, including emergency plan, standards and procedures 1.4 Participates in orientations on OSH requirements of tasks
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	<p>1.5 Provides feedback on health, safety, and security concerns in a sufficiently detailed manner.</p> <p>1.6 Practices workplace procedures for reporting hazards, incidents, injuries and sickness</p> <p>1.7 Reviews and reports compliance to workplace OSH regulations and hazard control procedures</p> <p>1.8 Identifies and proposes OSH trainings relevant to work</p>
2. Resource Implications	<p>The following resources should be provided:</p> <p>2.1 Facilities, materials tools and equipment necessary for the activity</p>
3. Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <p>3.1 Observation/Demonstration with oral questioning</p> <p>3.2 Third party report</p> <p>3.3 Written exam</p>
4. Context of Assessment	<p>Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.</p>
5. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>

CORE UNITS OF COMPETENCY

USE OF ICT DEVICES

UNIT CODE: IT/0S/ICTA/CC/01/4/A

UNIT DESCRIPTION

This unit covers the competencies required to understand the concepts of Information Communication Technology. They involve identifying computer components, operating a computer, understand information networks, identifying applications of ICT, identifying healthy, safety and environmental issues in ICT and identifying ICT security issues.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA <i>(Bold and italicised terms are elaborated in the Range)</i>
1. Identify computer components	1.1 Various hardware devices are identified according to the manufacturer's specifications 1.2 Functions of the hardware devices are described 1.3 Documentation of the hardware devices is done as per the manufacturer's specification. 1.4 Definition of application and operating system software terminologies is done 1.5 Types of application software are identified 1.6 Functions of the application and operating system software are outlined
2. Operate a computer	2.1 Switching on and off procedures is demonstrated. 2.2 Navigation and personalization of the windows operating system is done as per the operation manual 2.3 Basic file management operations are performed
3. Understand computer networks	3.1 Definition of computer networks is done 3.2 Components of computer networks are identified according to organization structure. 3.3 Terminologies used in computer networks are explained. 3.4 Types of computer networks are identified. 3.5 Applications of computer networks are outlined

4. Identify applications of ICT	4.1 Applications of ICT in various sectors is outlined 4.2 Merits, opportunities and challenges of ICT application are identified. 4.3 Emerging trends in ICT outlined
5. Identify healthy, safety and environmental issues in ICT	5.1 ICT risk <i>elements</i> are identified 5.2 Standards and guidelines for health, safety and environment are outlined 5.3 Opportunities of green ICT are identified.
6. Identify ICT security issues	6.1 ICT <i>assets</i> to be secured are identified 6.2 Goals of ICT security are outlined 6.3 Types of <i>security threats</i> are identified 6.4 Controls to security threats are outlined

RANGE

This section provides work conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	Range
	<i>May include but is not limited to:</i>
1. Hardware devices	<input type="checkbox"/> Printer <input type="checkbox"/> Mouse <input type="checkbox"/> Keyboard <input type="checkbox"/> Monitor <input type="checkbox"/> Desktops/laptops
2. Operating system.	<input type="checkbox"/> Microsoft windows <input type="checkbox"/> Mac OS <input type="checkbox"/> Linux
3. Types of networks	<input type="checkbox"/> WAN <input type="checkbox"/> LAN <input type="checkbox"/> WLAN <input type="checkbox"/> MAN
4. Security threats	<input type="checkbox"/> Virus <input type="checkbox"/> Malware <input type="checkbox"/> Hackers
5. Assets	<input type="checkbox"/> Computers <input type="checkbox"/> Printers <input type="checkbox"/> Switches

Variable	Range <i>May include but is not limited to:</i>
	<input type="checkbox"/> Routers

REQUIRED KNOWLEDGE AND UNDERSTANDING

The individual needs to demonstrate knowledge and understanding of:

- | |
|---|
| <ol style="list-style-type: none"> 1. Computer systems and their components 2. Functions of operating system 3. Types of application software 4. Types of computer networks 5. Opportunities of and application areas in ICT 6. Health, safety and environmental issues in relation to ICT 7. ICT security threats |
|---|

FOUNDATION SKILLS

The individual needs to demonstrate the following additional skills:

- | | |
|--|---|
| <ul style="list-style-type: none"> • Communications (verbal and written); • Time management; • Analytical; • Problem solving; • Planning; | <ul style="list-style-type: none"> • Decision making; • Report writing; |
|--|---|

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and understanding and range.

<ol style="list-style-type: none"> 1. Critical Aspects of Competency 	<p>Assessment requires evidence that the candidate:</p> <ol style="list-style-type: none"> 1. Identified computer hardware devices according to the manufacturer's specifications. 2. Demonstrated switching on and off procedures 3. Identified types and functions of application software 4. Outlined functions of operating system 5. Demonstrated navigation and personalizing of the windows Operating system 6. Identified types and functions of computer networks 7. Identified opportunities of and applications areas in ICT. 8. Outlined possible ICT security threats and controls.
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	9. Highlighted health, safety and environmental issues related to ICT use.
2. Resource Implications	Resources the same as that of workplace are advised to be applied Including computer, printers, software (operating system, office tools, network management tools), network components and devices etc.
3. Methods of Assessment	Competency may be assessed through: 3.1 Oral questioning 3.2 Practical demonstration 3.3 Observation 3.4 Written test
4. Context of Assessment	4.1 Competency may be assessed individually in the actual workplace or through simulated work environment
5. Guidance information for assessment	5.1 Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

INSTALL COMPUTER SOFTWARE

UNIT CODE: IT/0S/ICTA/CC/02/4/A

UNIT DESCRIPTION

This unit covers the competencies required to perform computer software installation work. Installation activities includes identification of the software to be installed, actual installation of the software, software functionality test and user training.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA <i>(Bold and italicized terms are elaborated in the Range)</i>
1. Identify software to be installed	1.1 Software are classified according to the functionality, resource requirement and use. 1.2 Selection of software to be installed is identified based on usage and system requirements 1.3 <i>Acquisition methods</i> of the selected software are established. 1.4 Licensing types and procedures are identified according to the type of software to be installed
2. Install the software	2.1 <i>Software specifications</i> and computer resource requirements are identified 2.2 Source of software installation files is determined 2.3 User vendor agreements are identified 2.4 Appropriate installation options are selected 2.5 Software installation is done as per the installation manual provided. 2.6 Software functionality is tested
3. Manage Software Changes	3.1 New user requirements are identified 3.2 Software changes is done as per need 3.3 Software functionality test is done according to the expected output. 3.4 Software change documentation is done.
4. Perform User training	4.1 User skills set are determined 4.2 Training manuals are prepared according to the organization ICT policy. 4.3 User training is conducted according to skill gap 4.4 Training feedback is documented.

RANGE

Variable	Range <i>May include but is not limited to:</i>
1. software acquisition methods	1.1 In – house developed 1.2 Tailor made 1.3 Outsourced/Off-the-shelf
2. Software specifications	2.1 Detailed description of a software system to be installed with its functional and non-functional requirements. Usually has the following characteristics among others: <ul style="list-style-type: none">✓ Complete.✓ User friendly.✓ Maintainability✓ Flexibility✓ Secure✓ Accessibility✓ Compatibility

REQUIRED KNOWLEDGE AND UNDERSTANDING

1. Different types of Software
2. Hardware requirements for software Installation
3. Software Acquisition Methods
4. Software parameter setting.
5. Software Installation procedures
6. Utilizing user training feedback.

FOUNDATION SKILLS

The individual needs to demonstrate the following foundation skills:

- Communications (verbal and written);
- Time management;
- Problem solving;
- Decision making;
- Planning;
- Report writing;
- Creativity

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and understanding and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Classified and selected software to be installed according to the functionality, resource requirement and usage 1.2 Identified computer requirements based on Software specifications for Installation 1.3 Performed Software Installation as per the installation manual provided 1.4 Performed Software changes as needed. 1.5 Performed software testing 1.6 Documented user training feedback.
2. Resource Implications	Resources the same as that of workplace are advised to be applied. Including Device drivers, operating system, utilities, application software and computers.
3. Methods of Assessment	Competency may be assessed through: 3.1 Observation with the help of check list 3.2 Practical demonstrations 3.3 Oral Questioning 3.4 Written test

4. Context of Assessment	Competency may be assessed individually in the actual workplace or a simulated work place setting
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

REPAIR AND MAINTAIN A COMPUTER

UNIT CODE: IT/0S/ICTA/CC/03/4/A

UNIT DESCRIPTION

This unit covers the competencies required for performing computer repair and maintenance using diagnosing, repairing and maintenance tools. It involves performing troubleshooting, dismantling of faulty components, repairing/replacing faulty components, up gradation and testing of computer functionality.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA <i>(Bold and italicized terms are elaborated in the Range)</i>
1. Assemble and Disassemble Computer Components	1.1 Tools for disassembling are acquired 1.2 Faulty components are disassembled from the computer according to the provided <i>instruction manuals</i> . 1.3 Documentation of faulty components is done
2. Troubleshoot Computer Components	1.1 Identification of computer parts is done 1.2 Gathering of <i>appropriate computer maintenance tools</i> and maintenance techniques is done 1.3 Theory of probable cause is established 1.4 Testing of the theory to determine cause is done 1.5 Problem cause is established 1.6 Appropriate solution to the problem is performed
3. Repair/replace and reassemble components	3.1 Faulty parts to be repaired or replaced are identified 3.2 Acquisition of new parts is done as per the specifications of the components in the case of replacement and repair is done on faulty components. 3.3 Reassemble the repaired or replaced components.
2. Test computer/component functionality	4.1 Testing tools are gathered according to the manufacturers manual

	<p>4.2 Testing techniques are outlined</p> <p>4.3 Testing procedures are identified.</p> <p>4.4 Testing of the repaired or replaced component is done as per the instructions/standards</p>
3. Upgrade computer hardware	<p>5.1 Identify hardware component to be upgraded.</p> <p>5.2 Install and configure the component</p> <p>5.3 Test the functionality of the installed component</p>

RANGE

Variable	Range
	<i>May include but is not limited to:</i>
1. Appropriate computer maintenance tools	<ul style="list-style-type: none"> <input type="checkbox"/> Straight-head screwdriver, large and small. <input type="checkbox"/> Phillips-head screwdriver, large and small. <input type="checkbox"/> Tweezers or part retriever. <input type="checkbox"/> Needle-nosed pliers. <input type="checkbox"/> Wire cutters. <input type="checkbox"/> Chip extractor. <input type="checkbox"/> Hex wrench set. <input type="checkbox"/> Torx screwdriver
2. Instruction manuals.	3.1 Refers to an instructional book or booklet that is supplied with almost all technologically advanced consumer product to be used during inspection
3. POST test	4.1 Process performed by firmware or software routines immediately after a computer or other digital electronic device is powered on.

REQUIRED KNOWLEDGE AND UNDERSTANDING

The individual needs to demonstrate knowledge and understanding of:

1. Troubleshooting techniques
2. Procedures and techniques for reassembling and disassembling.
3. Component testing techniques
4. Computer systems and their components
5. The manufacturer's warranty requirements relating to activities for the computer and related components.
6. Types of Computer/component testing
7. Types of Maintenance

FOUNDATION SKILLS

The individual needs to demonstrate the following additional skills:

- | | |
|---|---|
| <ul style="list-style-type: none">• Communications (verbal and written);• Proficient in ICT;• Time management;• Analytical• Faults troubleshooting• Problem solving;• Planning; | <ul style="list-style-type: none">• Decision making;• First aid;• Report writing; |
|---|---|

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and understanding and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: <ol style="list-style-type: none">1. Gathered appropriate computer repair and maintenance tools and performed troubleshooting2. Identified different types of maintenance3. Identified and disassembled Faulty components4. Performed specific component tests5. Repaired or replaced faulty components.
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	6. Upgraded hardware components as needed
2. Resource Implications	Resources the same as that of workplace are advised to be applied Including computer, printers, repair and maintains tools, device drivers etc.
3. Methods of Assessment	Competency may be assessed through: 3.1 Oral questioning 3.2 Practical demonstration 3.3 Observation 3.4 Written test
4. Context of Assessment	4.1 Competency may be assessed individually in the actual workplace or through simulated work environment
5. Guidance information for assessment	5.1 Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

APPLY MICROSOFT OFFICE TOOLS

UNIT CODE: IT/0S/ICTA/CC/04/4/A

UNIT DESCRIPTION

This unit covers the competencies required to understand the basic computer packages. It involves applying desktop publishing in official assignments, applying word processing using Ms Word, applying spreadsheet using Ms Excel, applying database management using Ms Access, applying graphic presentation using Ms PowerPoint, managing personal information using Ms Outlook.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA <i>(Bold and italicised terms are elaborated in the Range)</i>
1. Apply word processing using Ms Word	1.1. <i>Features of a word processor</i> are outlined 1.2. <i>Features of Ms Word interface</i> are identified 1.3. Creation and formatting of document is done according to office tasks. 1.4. Printing of document is done
2. Apply spreadsheet using Ms Excel	2.1. <i>Features of a spreadsheet</i> are outlined 2.2. <i>Features of Ms Excel interface</i> are identified 2.3. Creation of a workbook and worksheet is done 2.4. Editing and formatting of a worksheet is done in accordance to the workplace procedures. 2.5. Printing of a worksheet is done
3. Apply database management using Ms Access	3.1 <i>Features of a database management system</i> are outlined 3.2 <i>Features of Ms Access interface</i> are identified 3.3 Creation of a database as per the user requirements is done 3.4 Manipulation of database objects is done 3.5 Printing of reports is done
4. Apply graphic presentation using Ms PowerPoint	4.1. <i>Features of a presentation software</i> are outlined 4.2. <i>Features of PowerPoint interface</i> are identified 4.3. Creation of presentations is done 4.4. Editing and formatting of the presentation is done 4.5. Previewing and printing of handouts is done.

ELEMENT	PERFORMANCE CRITERIA <i>(Bold and italicised terms are elaborated in the Range)</i>
5. Manage personal information using Ms Outlook	5.1. <i>Features of an email client software</i> are outlined 5.2. <i>Features of Ms Outlook interface</i> are identified 5.3. Sending and receiving of emails is done. 5.4. Organization of personal information using Ms Outlook is done 5.5. Configuration of Outlook is done 5.6. Printing of emails is done.

RANGE

Variable	Range <i>May include but is not limited to:</i>
<i>Features of a word processor</i>	Creating and editing texts, copying, moving ,pasting, deleting texts, grammar and spell checking, formatting, creating and editing tables, mail merging, customizing page layout, insert pictures, tables, shapes, table of contents, printing
<i>Features of Ms Word interface</i>	Tabs, ribbon layout, quick access tool bar, editing window, document views.
<i>Features of a spreadsheet</i>	Creating and editing worksheet data, data sorting and filtering, data analysis, charts, formulas and functions, data importation, formatting worksheets, customizing layout, printing.
<i>Features of Ms Excel interface</i>	Tabs, ribbon layout, worksheet window, worksheet views, formula bar.
<i>Features of a database management system</i>	Database, tables, queries, reports, forms.
<i>Features of Ms Access interface</i>	Tabs, ribbon layout, navigation pane, work space, quick access tool bar.
<i>Features of a presentation software</i>	Slides, handouts, multimedia, Design and animation
<i>Features of PowerPoint interface</i>	Quick access tool bar, ribbon layout, tab, slide pane, notes pane, slides thumbnails, slides views section.

Variable	Range
	<i>May include but is not limited to:</i>
<i>Features of an email client software</i>	Account management, sending and receiving mails, file attachment, email rules, tasks, calendar, appointments, meeting, personal information management.
<i>Features of Ms Outlook interface</i>	Quick access tool bar, tab, ribbon layout, navigation pane, active window.

REQUIRED KNOWLEDGE AND UNDERSTANDING

The individual needs to demonstrate knowledge and understanding of:

<ol style="list-style-type: none"> 1. Creating, formatting, editing and printing using Ms word. 2. Creating, editing, formatting and printing of worksheets using Ms Excel 3. Design, develop and modify database objects as per requirements. 4. Creating, modify, present and print a multimedia document using a Ms PowerPoint. 5. Sending and retrieving mails, organizing the mail box, configuring email accounts
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FOUNDATION SKILLS

The individual needs to demonstrate the following additional skills:	
<ul style="list-style-type: none"> • Communications (verbal and written); • Time management; • Analytical • Faults troubleshooting • Problem solving; • Planning; 	<ul style="list-style-type: none"> • Decision making; • Report writing;

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and understanding and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Created, edited, formatted and printed document using Ms Word 1.2 Created, edited, formatted and printed worksheets using Ms Excel. 1.3 Designed, developed and modified a database using Ms Access. 1.4 Designed, developed and presented a multimedia document using Ms PowerPoint. 1.5 Send and retrieve mails, organized the mail box and configured account settings using Ms Outlook.
2. Resource Implications	Resources the same as that of workplace are advised to be applied Including computer, printers, Ms Office, Presentation tools (Projectors, pointers) printing papers.
3. Methods of Assessment	Competency may be assessed through: 3.1 Oral questioning 3.2 Practical demonstration 3.3 Observation 3.4 Written test
4. Context of Assessment	4.1 Competency may be assessed individually in the actual workplace or through simulated work environment
5. Guidance information for assessment	5.1 Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

USE THE INTERNET

UNIT CODE: IT/0S/ICTA/CC/05/4/A

UNIT DESCRIPTION

This unit covers the competencies required to understand how internet communication and browsing is done. It involves understanding fundamental concepts of the internet, accessing the internet, demonstrating the use of search engines and application of internet communication tools.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA <i>(Bold and italicized terms are elaborated in the Range)</i>
1. Understand fundamental concepts of internet.	1.1 The internet terminologies are defined. 1.2 Application areas of the Internet are outlined. 1.3 Requirements of internet connectivity are outlined. 1.4 Impacts of internet are outlined.
2. Access the internet	2.1 Web browsing applications are identified. 2.2 Common interface features of web browsers are identified. 2.3 Navigation within a web page and across web site is done. 2.4 Customization of web browser is done.
3. Demonstrate using search engines.	3.1 Common search engines are identified 3.2 Effective search principles are outlined. 3.3 Downloading and uploading of files is done
4. Apply internet communication tools.	4.1 Communication tools are identified. 4.2 User accounts are created and customized. 4.3 Effective application of communication tools is demonstrated. 4.4 Appropriate netiquette principles are applied when communicating. 4.5 Necessary privacy principles are applied when communicating.

RANGE

Variable	Range
	<i>May include but is not limited to:</i>
1. Web browsing applications	Google chrome, Firefox, internet explorer, opera
2. Common interface features	Home button, back and forward button, refresh button, address bar, bookmarks, history.
3. Search engines	Google, yahoo, MSN (Microsoft software network), Bing, ask.com
4. Search principles	Key words, using Boolean, using quotes
5. Communication tools	Email, instant messaging, blocks, VoIP, social networks, SMS
6. Netiquette principles	Privacy, Best practices
7. Necessary privacy principles	Limiting profile, disabling password memory, avoiding social engineering, avoiding pharming and phishing, safe Wi-Fi connectivity, strong passwords.

REQUIRED KNOWLEDGE AND UNDERSTANDING

The individual needs to demonstrate knowledge and understanding of:

<ol style="list-style-type: none"> 1. Fundamental concepts of internet connectivity 2. Using web browser in navigating web sites and customizing settings 3. Effective information searching 4. Effective application of communication tools
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FOUNDATION SKILLS

The individual needs to demonstrate the following additional skills:	
<ul style="list-style-type: none"> • Communications (verbal and written); • Proficient in ICT; • Time management; • Analytical • Faults troubleshooting • Problem solving; • Planning; 	<ul style="list-style-type: none"> • Decision making; • Report writing;

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and understanding and range.

1 Critical Aspects of Competency	<p><i>Assessment requires evidence that the candidate:</i></p> <p>1.1 Outlined fundamental concepts of internet connectivity.</p> <p>1.2 Used a web browser to navigate the web and customized access settings.</p> <p>1.3 Retrieved desired information using a search engine.</p> <p>1.4 Used and customized various communication tool as per the need</p> <p>1.5 Applied appropriate netiquette and privacy principles when communicating.</p>
2 Resource Implications	<p>Resources the same as that of workplace are advised to be applied Including computer with internet connectivity, printer, connection devices (router, modem)</p>
3 Methods of Assessment	<p>Competency may be assessed through:</p> <ul style="list-style-type: none">a. Oral questioningb. Practical demonstrationc. Observationd. Written test
4 Context of Assessment	<ul style="list-style-type: none">a. Competency may be assessed individually in the actual workplace or through simulated work environment
5 Guidance information for assessment	<ul style="list-style-type: none">a. Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.