



**REPUBLIC OF KENYA**

**NATIONAL OCCUPATIONAL STANDARDS**

**FOR**

**NUTRITIONIST AND DIETICIAN**

**LEVEL 5**



**TVET CDACC**  
**P.O. BOX 15745-00100**  
**NAIROBI**

First published 2019  
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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 of Kenya's development blueprint, Vision 2030 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 of Kenya 2010 and this resulted in 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 developing a competency-based curriculum for nutrition dietetic. These Occupational Standards will also be the basis 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 nutrition dietetic sector's growth and 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 a 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 labor force.

The TVET Curriculum Development, Assessment and Certification Council (TVET CDACC), in conjunction with nutrition dietetic Sector Skills Advisory Committee (SSAC) have developed these Occupational Standards for nutrition dietetic. These standards will be the basis for development of competency-based curriculum for nutrition dietetic

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, nutrition dietetic SSAC, expert workers and all those who participated in the development of these Occupational Standards.

**CHAIRPERSON, TVET CDACC**

## **ACKNOWLEDGMENT**

These Occupational Standards were developed through combined effort of various stakeholders from private and public organizations. I am 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 nutrition dietetic 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.

My gratitude also goes to the Ministry of Health which enabled the development of these Standards through the industry experts.

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

### **CHAIRPERSON**

### **NUTRITION DIETETIC SECTOR SKILLS ADVISORY COMMITTEE**

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## ACRONYMS AND ABBREVIATIONS

BC	: Basic Competency
CC	: Common Competencies
CDACC	: Curriculum Development Assessment and Certification Council
CR	: Core Competency
MED	: Medical
NUD	: Nutrition and Dietetics
OSHA	: Occupation Safety and Health Act
PPE	: Personal Protective Equipment
SOP	: Standard Operating Procedures
SSAC	: Sector Skills Advisory Committee
TVET	: Technical and Vocational Education and Training

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## OVERVIEW

Nutritionist and Dietician Certificate Level 5 qualification consists of competencies that a person must achieve to apply nutrition in emergency, apply principles of human nutrition, conduct nutrition care process and plan and manage meals. It also enables an individual to conduct community health and nutrition education and counselling, apply dietetic principles and conduct nutrition assessment and surveillance.

The units of competency leading to Nutritionist and Dietician Certificate Level 5 qualification include the following basic and core competencies:

### UNITS OF COMPETENCY

#### BASIC UNITS OF COMPETENCY

Unit Code	Unit Title
MED/OS/NUD/BC/01/5/A	Demonstrate communication skills
MED/OS/NUD/BC/02/5/A	Demonstrate numeracy skills
MED/OS/NUD/BC/03/5/A	Demonstrate digital literacy
MED/OS/NUD/BC/04/5/A	Demonstrate entrepreneurial skills
MED/OS/NUD/BC/05/5/A	Demonstrate employability skills
MED/OS/NUD/BC/06/5/A	Demonstrate environmental literacy
MED/OS/NUD/BC/07/5/A	Demonstrate occupational safety and health practices

#### COMMON UNITS OF COMPETENCY

Unit Code	Unit Title
MED/OS/NUD/CC/01/5/A	Demonstrate the knowledge of general biology
MED/OS/NUD/CC/02/5/A	Demonstrate knowledge of food microbiology techniques
MED/OS/NUD/CC/03/5/A	Manage food processing, safety and hygiene

#### CORE UNITS OF COMPETENCY

Unit Code	Unit Title
MED/OS/NUD/CR/01/5/A	Apply nutrition in emergency
MED/OS/NUD/CR/02/5/A	Apply principles of human nutrition
MED/OS/NUD/CR/03/5/A	Conduct nutrition care process
MED/OS/NUD/CR/04/5/A	Plan and manage meals
MED/OS/NUD/CR/05/5/A	Conduct community health and nutrition education and counselling
MED/OS/NUD/CR/06/5/A	Apply dietetic principles



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## **BASIC UNITS OF COMPETENCY**

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## DEMONSTRATE COMMUNICATION SKILLS

**UNIT CODE:** MED/OS/NUD/BC/01/5/A

### UNIT DESCRIPTION

This unit covers the competencies required to demonstrate communication skills. It involves meeting communication needs of clients and colleagues, contributing to the development of communication strategies, conducting workplace interviews, facilitating group discussions and representing the organization.

### 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><b>Bold and italicized terms are elaborated in the Range</b></i></p>
<p>1. Meet communication needs of clients and colleagues</p>	<p>1.1 Specific communication needs of clients and colleagues are identified and met based on workplace requirements</p> <p>1.2 Different communication approaches are identified and applied according to clients' needs</p> <p>1.3 Conflict is identified and addressed as per the standards of the organization</p>
<p>2. Contribute to the development of communication strategies</p>	<p>2.1 Strategies for internal and external dissemination of information are developed, promoted, implemented and reviewed as per organizations' strategic plan</p> <p>2.2 Channels of communication are established and reviewed based on the workplace needs</p> <p>2.3 Communication training needs are identified and provided according to SOPs</p> <p>2.4 Work related network and relationship are maintained based on workplace requirements</p> <p>2.5 Negotiation and conflict resolution strategies are maintained as per the workplace procedures</p>
<p>3. Conduct workplace interviews</p>	<p>3.1 <i><b>Communication strategies</b></i> are identified and employed in <i><b>interview situations</b></i> based on workplace requirements</p> <p>3.2 Records of interviews are made and maintained in accordance with organizational procedures</p> <p>3.3 Effective questioning, listening and nonverbal</p>

	communication techniques are used based on needs
4. Facilitate group discussions	<p>4.1 Mechanisms to enhance <i>effective group interaction</i> are identified and implemented according to workplace requirements</p> <p>4.2 Strategies to encourage group participation are identified and used as per organizations' procedures</p> <p>4.3 Meetings objectives and agenda are set and followed based on workplace requirements</p> <p>4.4 Relevant information is provided and feedback obtained according to set protocols</p> <p>4.5 Evaluation of group communication strategies is undertaken in accordance with workplace guidelines</p> <p>4.6 Specific communication needs of individuals are identified and addressed as per individual needs</p>
5. Represent the organization	<p>5.1 Relevant presentation are researched and presented based on internal or external communication forums requirements Presentation is delivered in a clear and sequential manner as per the predetermined time</p> <p>5.2 Presentation is made as per appropriate media</p> <p>5.3 Difference views are respected based on workplace procedures</p> <p>5.4 Written communication is done as per organizational standards</p> <p>5.5 Inquiries are responded according to organizational standard</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
1. Communication strategies may include but not limited to:	<ul style="list-style-type: none"> <li>• Language switch</li> <li>• Comprehension check</li> <li>• Repetition</li> <li>• Asking confirmation</li> <li>• Paraphrase</li> <li>• Clarification request</li> <li>• Translation</li> </ul>

	<ul style="list-style-type: none"> <li>• Restructuring</li> <li>• Approximation</li> <li>• Generalization</li> </ul>
2. Effective group interaction may include but not limited to:	<ul style="list-style-type: none"> <li>• Identifying and evaluating what is occurring within an interaction in a non-judgmental way</li> <li>• Using active listening</li> <li>• Making decision about appropriate words, behavior</li> <li>• Putting together response which is culturally appropriate</li> <li>• Expressing an individual perspective</li> <li>• Expressing own philosophy, ideology and background and exploring impact with relevance to communication</li> <li>• Openness and flexibility in communication</li> </ul>
3. Interview situations may include but not limited to:	<ul style="list-style-type: none"> <li>• Establishing rapport</li> <li>• Eliciting facts and information</li> <li>• Facilitating resolution of issues</li> <li>• Developing action plans</li> <li>• Diffusing potentially difficult situations</li> </ul>

## 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:

- Active listening
- Giving/receiving feedback
- Interpretation of information
- Role boundaries setting
- Negotiation
- Communication

### Required Knowledge

The individual needs to demonstrate knowledge of:

- Communication process
- Dynamics of groups and different styles of group leadership

- Communication skills relevant to client groups
- Flexibility in communication

## 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: <ul style="list-style-type: none"> <li>1.1 Met communication needs of clients and colleagues</li> <li>1.2 Contributed to the development of communication strategies</li> <li>1.3 Conducted interviews</li> <li>1.4 Facilitated group discussions</li> <li>1.5 Represented the organization</li> </ul>
2. Resource Implications	The following resources should be provided: <ul style="list-style-type: none"> <li>2.1 Access to relevant workplace or appropriately simulated environment where assessment can take place</li> <li>2.2 Materials relevant to the proposed activity or tasks</li> </ul>
3. Methods of Assessment	Competency in this unit may be assessed through: <ul style="list-style-type: none"> <li>3.1 Observation</li> <li>3.2 Oral questioning</li> <li>3.3 Written test</li> <li>3.4 Portfolio of Evidence</li> <li>3.5 Interview</li> <li>3.6 Third party report</li> </ul>
4. Context of Assessment	Competency may be assessed: <ul style="list-style-type: none"> <li>4.1 On the job</li> <li>4.2 Off the job</li> <li>4.3 During industrial attachment</li> </ul>
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

## DEMONSTRATE NUMERACY SKILLS

**UNIT CODE:** MED/OS/NUD/BC/02/5/A

### UNIT DESCRIPTION

This unit covers the competencies required to demonstrate numeracy skills. It involves calculating with whole numbers and familiar fractions, decimals, and percentages for work estimating, measuring, and calculating with routine metric measurements for work, using routine maps and plans for work, interpreting, drawing and constructing 2D and 3D shapes for work, interpreting routine tables, graphs and charts for work, collecting data and constructing routine tables and graphs for work and using basic functions of calculator.

### ELEMENTS AND PERFORMANCE CRITERIA

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
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><b>Bold and italicized terms are elaborated in the Range.</b></i>
1. Calculate with whole numbers and familiar fractions, decimals and percentages for work	1.1 Mathematical information that may be partly embedded in routine workplace tasks and texts is selected and interpreted as per SOPs 1.2 Whole numbers and routine or familiar fractions, decimals and percentages including familiar rates are interpreted and comprehended as per SOPs 1.3 Calculations which may involve a number of steps are performed as per SOPs 1.4 Calculations done with whole numbers and routine or familiar fractions, decimals and percentages as per SOPs 1.5 Conversion between equivalent forms of fractions, decimals and percentages is done as per SOPs 1.6 Order of operations is applied to solve multi-step calculations as per SOPs 1.7 Problem solving strategies are appropriately applied as per SOPs 1.8 Estimations are made to check reasonableness of problem solving process, outcome and its appropriateness to the context and task as per SOPs

	1.9 Formal and informal mathematical language and symbolism are used to communicate the result of the task as per SOPs.
2. Estimate, measure, and calculate with routine metric measurements for work	<p>2.1 Measurement information in workplace tasks and texts are selected and interpreted in accordance with workplace requirements</p> <p>2.2 Appropriate routine measuring equipment are identified and selected in accordance with workplace requirements</p> <p>2.3 Measurements are estimated and made using correct units as per measurement manuals.</p> <p>2.4 Estimations and calculations done as per routine measurements</p> <p>2.5 Conversions performed routinely as per metric units</p> <p>2.6 Problem solving processes are used to undertake the tasks as per workplace procedures.</p> <p>2.7 Estimations are made to check reasonableness of problem solving process, outcome and its appropriateness to the context and task as per workplace procedures</p> <p>2.8 Information is recorded using mathematical language and symbols appropriate to discuss the task as per workplace procedures.</p>
3. Use routine maps and plans for work	<p>3.1 Features are identified in routine maps and plans as per SOPs</p> <p>3.2 Symbols and keys in routine maps and plans are clearly explained as per SOPs</p> <p>3.3 Orientation of map to North is identified and interpreted as per SOPs</p> <p>3.4 Understanding of direction and location is clearly demonstrated as per SOPs</p> <p>3.5 Simple scale is applied to estimate length of objects, or distance to location or object as per SOPs</p> <p>3.6 Directions are given and received using both formal and informal language as per SOPs</p>
4. Interpret, draw and construct 2D and 3D shapes for work	<p>4.1 Two dimensional shapes and routine three dimensional shapes identified in everyday objects and in different orientations in accordance with job specifications</p> <p>4.2 The use and application of shapes elaborately explained as per SOPs</p> <p>4.3 Formal and informal mathematical language and symbols</p>



	<p>used to describe and compare the features of two dimensional shapes and routine three dimensional shapes as per workplace procedures.</p> <p>4.4 Common angles identified in accordance with SOPs</p> <p>4.5 Common angles in everyday objects are appropriately estimated as per SOPs</p> <p>4.6 Formal and informal mathematical language are used to describe and compare common angles as per workplace procedures.</p> <p>4.7 Common geometric instruments used to draw two dimensional shapes as per SOPs</p> <p>4.8 Routine three dimensional objects constructed from given nets as per SOPs.</p>
5. Interpret routine tables, graphs and charts for work	<p>5.1 Routine tables, graphs and charts identified in predominately familiar texts and contexts as per tables and graph manuals</p> <p>5.2 Common types of graphs and their different uses identified as per SOPs</p> <p>5.3 Features of tables, graphs and charts identified as per workplace procedures</p> <p>5.4 Information in routine tables, graphs and charts located and interpreted as per workplace procedures</p> <p>5.5 Calculations are perform to interpret information as per SOPs</p> <p>5.6 How statistics can inform and persuade interpretations is explained as per SOPs</p> <p>5.7 Misleading statistical information is identified as per workplace procedures.</p> <p>5.8 Information relevant to the workplace is discussed as per workplace procedures.</p>
6. Collect data and construct routine tables and graphs for work	<p>6.1 Features of common tables and graphs identified as per SOPs</p> <p>6.2 Uses of <i>different tables and graphs</i> identified as per job specifications</p> <p>6.3 Data and variables to be collected are determined as per workplace procedures.</p> <p>6.4 The audience is determined as per the workplace procedures</p> <p>6.5 Method of data collection is select as per job requirement</p>

	<p>6.6 Data is collected as per SOPs</p> <p>6.7 Information is collated in a table as per SOPs</p> <p>6.8 Suitable scale and axes determined as per job specifications</p> <p>6.9 Graph to present information is drafted and drawn as per SOPs</p> <p>6.10 Data checked to ensure that it meets the expected results and context as per workplace procedures</p> <p>6.11 Information is reported or discussed using formal and informal mathematical language as per workplace procedures</p>
7. Use basic functions of calculator	<p>7.1 Keys are identified and used for <i>basic functions on a calculator</i> as per SOPs</p> <p>7.2 Calculation is done using whole numbers, money and routine decimals and percentages as per SOPs</p> <p>7.3 Calculation done with routine fractions and percentages as per SOPs</p> <p>7.4 Order of operations is applied to solve multi-step calculations as per SOPs</p> <p>7.5 Results are interpreted, displayed and recorded as per workplace procedures</p> <p>7.6 Estimations are made to check reasonableness of problem solving process, outcome and its appropriateness to the context and task as per workplace procedures</p> <p>7.7 Formal and informal mathematical language and appropriate symbolism and conventions used to communicate the result of the task as per workplace procedures.</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
1. Use basic functions of calculator may	<ul style="list-style-type: none"> <li>• Addition</li> <li>• Multiplication</li> </ul>

include but not limited to:	<ul style="list-style-type: none"> <li>• Calculate ratios</li> <li>• Conversion of ratios into percentages</li> </ul>
2. Different tables and graphs may include but not limited to:	<ul style="list-style-type: none"> <li>• Bar Graphs</li> <li>• Flow Charts</li> <li>• Pie Charts</li> <li>• Pictograph</li> <li>• Line Graphs</li> <li>• Time Series Graphs</li> <li>• Stem and Leaf Plot</li> <li>• Histogram</li> <li>• Dot Plot</li> <li>• Scatter plot</li> </ul>

## 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:

- Measuring
- Logical thinking
- Computing
- Drawing of graphs
- Applying mathematical formulas
- Analytical

### 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	Assessment requires evidence that the candidate: <ol style="list-style-type: none"> <li>1.1 Calculated correctly with whole numbers and routine or familiar fractions, decimals and percentages</li> <li>1.2 Estimated, measured and calculated with routine metric measurements</li> <li>1.3 Applied simple scale to estimate length of objects or distance to location or object</li> <li>1.4 Used formal and informal mathematical language to describe and compare common angles</li> <li>1.5 Used common geometric instruments to draw two dimensional shapes</li> <li>1.6 Collected data and constructed routine tables and graphs</li> <li>1.7 Used basic functions of calculator correctly</li> </ol>
2. Resource Implications	The following resources should be provided: <ol style="list-style-type: none"> <li>2.1 Access to relevant workplace or appropriately simulated environment where assessment can take place</li> <li>2.2 Materials relevant to the proposed activity or tasks</li> </ol>
3. Methods of Assessment	Competency may be assessed through: <ol style="list-style-type: none"> <li>3.1 Observation</li> <li>3.2 Oral questioning</li> <li>3.3 Written test</li> <li>3.4 Portfolio of Evidence</li> <li>3.5 Interview</li> <li>3.6 Third party report</li> </ol>
4. Context of Assessment	Competency may be assessed in: <ol style="list-style-type: none"> <li>4.1 On the job</li> <li>4.2 Off the job</li> </ol>

	4.3 Industrial attachment
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

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## DEMONSTRATE DIGITAL LITERACY

**UNIT CODE:** MED/OS/NUD/BC/03/5/A

### UNIT DESCRIPTION

This unit covers the competencies required to demonstrate digital literacy. It involves identifying appropriate computer software and hardware, applying security measures to data, hardware, software in automated environment, applying computer software in solving tasks, applying internet and email in communication at workplace, applying desktop publishing in official assignment and preparing presentation packages.

### 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><b>Bold and italicized terms are elaborated in the Range</b></i></p>
<p>1. Identify appropriate computer software and hardware</p>	<p>1.1 Concepts of ICT are determined in accordance with computer equipment</p> <p>1.2 Classifications of computers are determined in accordance with manufacturers specification</p> <p>1.3 <i><b>Appropriate computer software</b></i> is identified according to manufacturer's specification</p> <p>1.4 <i><b>Appropriate computer hardware</b></i> is identified according to manufacturer's specification</p> <p>1.5 Functions and commands of operating system are determined in accordance with manufacturer's specification</p>
<p>2. Apply security measures to data, hardware, software in automated environment</p>	<p>2.1 <i><b>Data security and privacy are classified</b></i> in accordance with the prevailing technology</p> <p>2.2 <i><b>Security threats</b></i> are identified, <i><b>and control measures</b></i> are applied in accordance with laws governing protection of ICT</p> <p>2.3 Computer threats and crimes are detected in accordance with Information security management guidelines</p> <p>2.4 Protection against computer crimes is undertaken in accordance with laws governing protection of ICT</p>
<p>3. Apply computer software in</p>	<p>3.1 <i><b>Word processing concepts</b></i> are applied in resolving workplace tasks, report writing and documentation as per job requirements</p>

<p>solving tasks</p>	<p>3.2 <b>Word processing utilities</b> are applied in accordance with workplace procedures</p> <p>3.3 Worksheet layout is prepared in accordance with work procedures</p> <p>3.4 Worksheet is build and data manipulated in the worksheet in accordance with workplace procedures</p> <p>3.5 Continuous data manipulated on worksheet is undertaken in accordance with work requirements</p> <p>3.6 Database design and manipulation is undertaken in accordance with office procedures</p> <p>3.7 Data sorting, indexing, storage, retrieval and security is provided in accordance with workplace procedures</p>
<p>4. Apply internet and email in communication at workplace</p>	<p>4.1 Electronic mail addresses are opened and applied in workplace communication in accordance with office policy</p> <p>4.2 Office internet functions are defined and executed in accordance with office procedures</p> <p>4.3 <b>Network configuration</b> is determined in accordance with office operations procedures</p> <p>4.4 Official World Wide Web is installed and managed according to workplace procedures</p>
<p>5. Apply desktop publishing in official assignments</p>	<p>5.1 Desktop publishing functions and tools are identified in accordance with manufactures specifications</p> <p>5.2 Desktop publishing tools are developed in accordance with work requirements</p> <p>5.3 Desktop publishing tools are applied in accordance with workplace requirements</p> <p>5.4 Typeset work is enhanced in accordance with workplace standards</p>
<p>6. Prepare presentation packages</p>	<p>6.1 Types of presentation packages are identified in accordance with office requirements</p> <p>6.2 Slides are created and formulated in accordance with workplace procedures</p> <p>6.3 Slides are edited and run in accordance with work procedures</p> <p>6.4 Slides and handouts are printed according to work requirements</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
1. Appropriate computer hardware may include but not limited to:	<ul style="list-style-type: none"><li>• Computer case</li><li>• Monitor</li><li>• keyboard</li><li>• mouse</li></ul>
2. Data security and privacy may include but not limited to:	<ul style="list-style-type: none"><li>• Confidentiality of data</li><li>• Cloud computing</li><li>• Integrity -but-curious data surfing</li></ul>
3. Security and control measures may include but not limited to:	<ul style="list-style-type: none"><li>• Counter measures against cyber terrorism</li><li>• Risk reduction</li><li>• Cyber threat issues</li><li>• Risk management</li><li>• Pass wording</li></ul>
4. Security threats may include but not limited to:	<ul style="list-style-type: none"><li>• Cyber terrorism</li><li>• Hacking</li></ul>

## 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
- Basic ICT skills

### Required Knowledge



The individual needs to demonstrate knowledge of:

- Software concept
- Functions of computer software and hardware
- Data security and privacy
- Computer security threats and control measures
- Technology underlying cyber-attacks and networks
- Cyber terrorism
- Computer crimes
- Detection and protection of computer crimes
- Laws governing protection of ICT
- Microsoft suite

## 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"> <li>1.1 Identified and controlled security threats</li> <li>1.2 Detected and protected computer crimes</li> <li>1.3 Applied word processing in office tasks</li> <li>1.4 Designed, prepared work sheet and applied data to the cells in accordance to workplace procedures</li> <li>1.5 Opened electronic mail for office communication as per workplace procedure</li> <li>1.6 Installed internet and World Wide Web for office tasks in accordance with office procedures</li> <li>1.7 Integrated emerging issues in computer ICT applications</li> <li>1.8 Applied laws governing protection of ICT</li> </ul>
<p>2. Resource Implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> <li>2.1 Tablets</li> <li>2.2 Laptops</li> <li>2.3 Desktop computers</li> <li>2.4 Calculators</li> <li>2.5 Internet</li> <li>2.6 Smart phones</li> <li>2.7 Operation Manuals</li> </ul>
<p>3. Methods of</p>	<p>Competency may be assessed through:</p>

Assessment	<ul style="list-style-type: none"> <li>3.1 Written Test</li> <li>3.2 Observation</li> <li>3.3 Practical assignment</li> <li>3.4 Interview/Oral Questioning</li> </ul>
4. Context of Assessment	<p>Competency may be assessed in:</p> <ul style="list-style-type: none"> <li>4.1 Off the job</li> <li>4.2 On the job setting</li> <li>4.3 Industrial attachment</li> </ul>
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

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## DEMONSTRATE ENTREPRENEURIAL SKILLS

UNIT CODE : MED/OS/NUD/BC/04/5/A

### UNIT DESCRIPTION

This unit covers the competencies required to demonstrate understanding of entrepreneurship. It involves demonstrating understanding of an entrepreneur, entrepreneurship, and self-employment, identifying entrepreneurship opportunities, creating entrepreneurial awareness, applying entrepreneurial motivation, developing business innovative strategies and developing business plan.

### ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Demonstrate understanding of an entrepreneur	<ul style="list-style-type: none"><li>1.1 Entrepreneurs and Businesspersons are distinguished as per principles of entrepreneurship</li><li>1.2 <i>Types of entrepreneurs</i> are identified as per principles of entrepreneurship</li><li>1.3 Ways of becoming an entrepreneur are identified as per principles of Entrepreneurship</li><li>1.4 <i>Characteristics of Entrepreneurs</i> are identified as per principles of Entrepreneurship</li><li>1.5 Factors affecting Entrepreneurship development are explored as per principles of Entrepreneurship</li></ul>
2. Demonstrate understanding of Entrepreneurship and self-employment	<ul style="list-style-type: none"><li>2.1 Entrepreneurship and self-employment are distinguished as per principles of entrepreneurship</li><li>2.2 Importance of self-employment is analysed based on business procedures and strategies</li><li>2.3 <i>Requirements for entry into self-employment</i> are identified according to business procedures and strategies</li><li>2.4 Role of an Entrepreneur in business is determined according to business procedures and strategies</li><li>2.5 Contributions of Entrepreneurs to National development are identified as per business procedures and strategies</li><li>2.6 Entrepreneurship culture in Kenya is explored as per business procedures and strategies</li><li>2.7 Born or made Entrepreneurs are distinguished as</li></ul>

	per entrepreneurial traits
3. Identify Entrepreneurship opportunities	<p>3.1 Sources of business ideas are identified as per business procedures and strategies</p> <p>3.2 Business ideas and opportunities are generated as per business procedures and strategies</p> <p>3.3 Business life cycle is analysed as per business procedures and strategies</p> <p>3.4 Legal aspects of business are identified as per procedures and strategies</p> <p>3.5 Product demand is assessed as per market strategies</p> <p>3.6 Types of <b>business environment</b> are identified and evaluated as per business procedures</p> <p>3.7 Factors to consider when evaluating business environment are explored based on business procedure and strategies</p> <p>3.8 Technology in business is incorporated as per best practice</p>
4. Create entrepreneurial awareness	<p>4.1 <b>Forms of businesses</b> are explored as per business procedures and strategies</p> <p>4.2 Sources of business finance are identified as per business procedures and strategies</p> <p>4.3 Factors in selecting source of business finance are identified as per business procedures and strategies</p> <p>4.4 <b>Governing policies</b> on Small Scale Enterprises (SSEs) are determined as per business procedures and strategies</p> <p>4.5 Problems of starting and operating SSEs are explored as per business procedures and strategies</p>
5. Apply entrepreneurial motivation	<p>5.1 <b>Internal and external motivation</b> factors are determined in accordance with motivational theories</p> <p>5.2 Self-assessment is carried out as per entrepreneurial orientation</p> <p>5.3 Effective communications are carried out in accordance with communication principles</p> <p>5.4 Entrepreneurial motivation is applied as per motivational theories</p>

6. Develop innovative business strategies	6.1 Business innovation strategies are determined in accordance with the organization strategies 6.2 Creativity in business development is demonstrated in accordance with business strategies 6.3 <i>Innovative business strategies</i> are developed as per business principles 6.4 Linkages with other entrepreneurs are created as per best practice 6.5 ICT is incorporated in business growth and development as per best practice
7. Develop Business Plan	7.1 Identified Business is described as per business procedures and strategies 7.2 Marketing plan is developed as per business plan format 7.3 Organizational/Management plan is prepared in accordance with business plan format 7.4 Production/operation plan in accordance with business plan format 7.5 Financial plan is prepared in accordance with the business plan format 7.6 Executive summary is prepared in accordance with business plan format 7.7 Business plan is presented as per best practice

## 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
1. Types of entrepreneurs may include but not limited to:	<ul style="list-style-type: none"> <li>• Innovators</li> <li>• Imitators</li> <li>• Craft</li> <li>• Opportunistic</li> <li>• Speculators</li> </ul>
2. Characteristics of Entrepreneurs may include but not limited to:	<ul style="list-style-type: none"> <li>• Creative</li> <li>• Innovative</li> <li>• Planner</li> </ul>

	<ul style="list-style-type: none"> <li>• Risk taker</li> <li>• Networker</li> <li>• Confident</li> <li>• Flexible</li> <li>• Persistent</li> <li>• Patient</li> <li>• Independent</li> <li>• Future oriented</li> <li>• Goal oriented</li> </ul>
3. Requirements for entry into self-employment may include but not limited to	<ul style="list-style-type: none"> <li>• Technical skills</li> <li>• Management skills</li> <li>• Entrepreneurial skills</li> <li>• Resources</li> <li>• Infrastructure</li> </ul>
4. Internal and external motivation may include but not limited to:	<ul style="list-style-type: none"> <li>• Interest</li> <li>• Passion</li> <li>• Freedom</li> <li>• Prestige</li> <li>• Rewards</li> <li>• Punishment</li> <li>• Enabling environment</li> <li>• Government policies</li> </ul>
5. Business environment may include but not limited to:	<ul style="list-style-type: none"> <li>• External</li> <li>• Internal</li> <li>• Intermediate</li> </ul>
6. Forms of businesses may include but not limited to:	<ul style="list-style-type: none"> <li>• Sole proprietorship</li> <li>• Partnership</li> <li>• Limited companies</li> <li>• Cooperatives</li> </ul>
7. Governing policies may include but not limited to:	<ul style="list-style-type: none"> <li>• Increasing scope for finance</li> <li>• Promoting cooperation between entrepreneurs and private sector</li> <li>• Reducing regulatory burden on entrepreneurs</li> <li>• Developing IT tools for entrepreneurs</li> </ul>
8. Innovative business strategies may include but not limited to:	<ul style="list-style-type: none"> <li>• New products</li> <li>• New methods of production</li> <li>• New markets</li> </ul>

- |  |   |
|--|---|
|  | <ul style="list-style-type: none"><li>• New sources of supplies</li><li>• Change in industrialization</li></ul> |
|--|---|

## **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
- Management
- Problem-solving
- Root-cause analysis
- Communication

### **Required Knowledge**

The individual needs to demonstrate knowledge of:

- Decision making
- Business communication
- Change management
- Competition
- Risk
- Net working
- Time management
- Leadership
- Factors affecting entrepreneurship development
- Principles of Entrepreneurship
- Features and benefits of common operational practices, e. g., continuous improvement (kaizen), waste elimination,
- Conflict resolution
- Health, safety and environment (HSE) principles and requirements
- Customer care strategies
- Basic financial management
- Business strategic planning
- Impact of change on individuals, groups and industries

- Government and regulatory processes
- Local and international market trends
- Product promotion strategies
- Market and feasibility studies
- Government and regulatory processes
- Local and international business environment
- Relevant developments in other industries
- Regional/ County business expansion strategies

## 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"> <li>1.1 Distinguished entrepreneurs and business persons correctly</li> <li>1.2 Identified ways of becoming an entrepreneur appropriately</li> <li>1.3 Explored factors affecting entrepreneurship development appropriately</li> <li>1.4 Analysed importance of self-employment accurately</li> <li>1.5 Identified requirements for entry into self-employment correctly</li> <li>1.6 Identified sources of business ideas correctly</li> <li>1.7 Generated Business ideas and opportunities correctly</li> <li>1.8 Analysed business life cycle accurately</li> <li>1.9 Identified legal aspects of business correctly</li> <li>1.10 Assessed product demand accurately</li> <li>1.11 Determined Internal and external motivation factors appropriately</li> <li>1.12 Carried out communications effectively</li> <li>1.13 Identified sources of business finance correctly</li> <li>1.14 Determined Governing policy on small scale enterprise appropriately</li> <li>1.15 Explored problems of starting and operating SSEs effectively</li> <li>1.16 Developed Marketing, Organizational/Management, Production/Operation and Financial plans correctly</li> <li>1.17 Prepared executive summary correctly</li> </ul>
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	<p>1.18 Determined business innovative strategies appropriately</p> <p>1.19 Presented business plan effectively</p>
2. Resource Implications	<p>The following resources should be provided:</p> <p>2.1 Access to relevant workplace where assessment can take place</p> <p>2.2 Appropriately simulated environment where assessment can take place</p>
3. Methods of Assessment	<p>Competency may be assessed through:</p> <p>3.1 Written tests</p> <p>3.2 Oral questions</p> <p>3.3 Third party report</p> <p>3.4 Interviews</p> <p>3.5 Portfolio</p>
4. Context of Assessment	<p>Competency may be assessed:</p> <p>4.1 On-the-job</p> <p>4.2 Off-the-job</p> <p>4.3 During Industrial attachment</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 EMPLOYABILITY SKILLS

**UNIT CODE:** MED/OS/NUD/BC/05/5/A

### UNIT DESCRIPTION

This unit covers competencies required to demonstrate employability skills. It involves conducting self-management, demonstrating interpersonal communication, critical safe work habits, leading small teams, planning and organizing work, maintaining professional growth and development, demonstrating workplace learning, problem solving skills and managing workplace ethics.

### ELEMENTS AND PERFORMANCE CRITERIA

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
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><b>Bold and italicized terms are elaborated in the Range</b></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 Emotional intelligence is demonstrated 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 based on workplace instructions. 1.6 Self-esteem and a positive self-image are developed and maintained based on values. 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 based on personal objectives
2. Demonstrate interpersonal communication	2.1 Writing skills are demonstrated as per communication policy 2.2 Negotiation and persuasion skills are demonstrated as per

	<p>communication policy</p> <p>2.3 Internal and external stakeholders' needs are identified and interpreted as per the communication policy</p> <p>2.4 Communication networks are established based on workplace policy</p> <p>2.5 Information is shared as per communication policy</p>
3. Demonstrate critical safe work habits	<p>3.1 Stress is managed in accordance with workplace policy.</p> <p>3.2 Punctuality and time consciousness is demonstrated in line with workplace policy.</p> <p>3.3 Personal objectives are integrated with organization goals based on organization's strategic plan.</p> <p>3.4 <b>Resources</b> are utilized in accordance with workplace policy.</p> <p>3.5 Work priorities are set in accordance to workplace goals and objectives.</p> <p>3.6 Leisure time is recognized and utilized in line with personal objectives.</p> <p>3.7 <b>Drugs and substances of abuse</b> are identified and avoided based on workplace policy.</p> <p>3.8 HIV and AIDS prevention awareness is demonstrated in line with workplace policy.</p> <p>3.9 Safety consciousness is demonstrated in the workplace based on organization safety policy.</p> <p>3.10 <b>Emerging issues</b> are identified and dealt with in accordance with organization policy.</p>
4. Lead small teams	<p>4.1 Performance targets for the <b>team</b> are set based on organization's objectives</p> <p>4.2 Duties are assigned in accordance with the organization policy.</p> <p>4.3 <b>Forms of communication</b> in a team are established according to organization's policy.</p> <p>4.4 Team performance is evaluated based on set targets as per workplace policy.</p> <p>4.5 Conflicts are resolved between team members in line with organization policy.</p> <p>4.6 Gender related issues are identified and mainstreamed in accordance workplace policy.</p> <p>4.7 Human rights and fundamental freedoms are identified and respected as Constitution of Kenya 2010.</p>

	4.8 Healthy relationships are developed and maintained in line with workplace.
5. Plan and organize work	<p>5.1 Task requirements are identified as per the workplace objectives</p> <p>5.2 Task is interpreted in accordance with safety (OHS), environmental requirements and quality requirements</p> <p>5.3 Work activity is organized with other involved personnel as per the SOPs</p> <p>5.4 Resources are mobilized, allocated and utilized to meet project goals and deliverables.</p> <p>5.5 Work activities are monitored and evaluated in line with organization procedures.</p> <p>5.6 Job planning is documented in accordance with workplace requirements.</p> <p>5.7 Time is managed achieve workplace set goals and objectives.</p>
6. Maintain professional growth and development	<p>6.1 Personal training needs are identified and assessed in line with the requirements of the job.</p> <p>6.2 <b>Training and career opportunities</b> are identified and utilized based on job requirements.</p> <p>6.3 Resources for training are mobilized and allocated based organizations and individual skills needs.</p> <p>6.4 Licensees and certifications relevant to job and career are obtained and renewed as per policy.</p> <p>6.5 Work priorities and personal commitments are balanced and managed based on requirements of the job and personal objectives.</p> <p>6.6 Recognitions are sought as proof of career advancement in line with professional requirements.</p>
7. Demonstrate workplace learning	<p>7.1 Learning opportunities are sought and managed based on job requirement and organization policy.</p> <p>7.2 Improvement in performance is demonstrated based on courses attended.</p> <p>7.3 Application of learning is demonstrated in both technical and non-technical aspects based on requirements of the job</p> <p>7.4 Time and effort is invested in learning new skills based on job requirements</p> <p>7.5 Initiative is taken to create more effective and efficient processes and procedures in line with workplace policy.</p>

	<p>7.6 New systems are developed and maintained in accordance with the requirements of the job.</p> <p>7.7 Awareness of personal role in workplace <i>innovation</i> is demonstrated based on requirements of the job.</p>
8. Demonstrate problem solving skills	<p>8.1 Creative, innovative and practical solutions are developed based on the problem</p> <p>8.2 Independence and initiative in identifying and solving problems is demonstrated based on requirements of the job.</p> <p>8.3 Team problems are solved as per the workplace guidelines</p> <p>8.4 Problem solving strategies are applied as per the workplace guidelines</p> <p>8.5 Problems are analyzed and assumptions tested as per the context of data and circumstances</p>
9. Demonstrate workplace ethics	<p>9.1 Policies and guidelines are observed as per the workplace requirements</p> <p>9.2 Self-worth and professionalism is exercised in line with personal goals and organizational policies</p> <p>9.3 Code of conduct is observed as per the workplace requirements</p> <p>9.4 Integrity is demonstrated as per legal requirement</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.

Range	Variable
1. Drug and substance abuse may include but not limited to:	<p>Commonly abused</p> <ul style="list-style-type: none"> <li>• Alcohol</li> <li>• Tobacco</li> <li>• Miraa</li> <li>• Over-the-counter drugs</li> <li>• Cocaine</li> <li>• Bhang</li> <li>• Glue</li> </ul>
2. Feedback may include but not limited to:	<ul style="list-style-type: none"> <li>• Verbal</li> <li>• Written</li> <li>• Informal</li> </ul>

	<ul style="list-style-type: none"> <li>• Formal</li> </ul>
3. Relationships may include but not limited to:	<ul style="list-style-type: none"> <li>• Man/Woman</li> <li>• Trainer/trainee</li> <li>• Employee/employer</li> <li>• Client/service provider</li> <li>• Husband/wife</li> <li>• Boy/girl</li> <li>• Parent/child</li> <li>• Sibling relationships</li> </ul>
4. Forms of communication may include but not limited to:	<ul style="list-style-type: none"> <li>• Written</li> <li>• Visual</li> <li>• Verbal</li> <li>• Non verbal</li> <li>• Formal and informal</li> </ul>
5. Team may include but not limited to:	<ul style="list-style-type: none"> <li>• Small work group</li> <li>• Staff in a section/department</li> <li>• Inter-agency group</li> </ul>
6. Personal growth may include but not limited to:	<ul style="list-style-type: none"> <li>• Growth in the job</li> <li>• Career mobility</li> <li>• Gains and exposure the job gives</li> <li>• Net workings</li> <li>• Benefits that accrue to the individual as a result of noteworthy performance</li> </ul>
7. Personal objectives may include but not limited to:	<ul style="list-style-type: none"> <li>• Long term</li> <li>• Short term</li> <li>• Broad</li> <li>• Specific</li> </ul>
8. Trainings and career opportunities may include but not limited to	<ul style="list-style-type: none"> <li>• Participation in training programs</li> <li>• Technical</li> <li>• Supervisory</li> <li>• Managerial</li> <li>• Continuing Education</li> <li>• Serving as Resource Persons in conferences and workshops</li> </ul>
9. Resource may include but not limited to:	<ul style="list-style-type: none"> <li>• Human</li> <li>• Financial</li> </ul>

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

## 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
- Critical thinking
- Observation
- Organizing
- Negotiation
- Monitoring
- Evaluation
- Record keeping
- Problem solving
- Decision Making
- Resource utilization
- Resource mobilization

### 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
- Gender mainstreaming
- HIV and AIDS
- Drug and substance abuse
- Leadership
- Safe work habits
- Professional growth and development
- Technology in the workplace
- Emerging issues
- Social media
- Terrorism
- National cohesion

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## 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"> <li>1.1 Conducted self-management</li> <li>1.2 Demonstrated interpersonal communication</li> <li>1.3 Demonstrated critical safe work habits</li> <li>1.4 Led small teams</li> </ul>
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	<p>1.5 Planned and organized work</p> <p>1.6 Maintained professional growth and development</p> <p>1.7 Demonstrated workplace learning</p> <p>1.8 Demonstrated problem solving skills</p> <p>1.9 Demonstrated workplace ethics</p>
2. Resource Implications	<p>The following resources should be provided:</p> <p>2.1 Access to relevant workplace where assessment can take place</p> <p>2.2 Appropriately simulated environment where assessment can take place</p>
3. Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <p>3.1 Oral questioning</p> <p>3.2 Portfolio of evidence</p> <p>3.3 Third Party Reports</p> <p>3.4 Written tests</p>
4. Context of Assessment	<p>Competency may be assessed:</p> <p>4.1 On-the-job</p> <p>4.2 Off-the –job</p> <p>4.3 During Industrial attachment</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 ENVIRONMENTAL LITERACY

**UNIT CODE:** MED/OS/NUD/BC/06/5/A

### UNIT DESCRIPTION

This unit describes the competencies required to demonstrate understanding of environmental literacy. It involves controlling environmental hazard, controlling control environmental pollution, complying with workplace sustainable resource use, evaluating current practices in relation to resource usage, identifying environmental legislations/conventions for environmental concerns, implementing specific environmental programs and monitoring activities on environmental protection/programs.

### 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><b>Bold and italicized terms are elaborated in the Range</b></i>
1. Control environmental hazard	1.1 <i><b>Storage methods</b></i> for environmentally <i><b>hazardous</b></i> materials are strictly followed according to environmental regulations and OSHS. 1.2 <i><b>Disposal methods</b></i> of hazardous wastes are followed always according to environmental regulations and OSHS. 1.3 <i><b>PPE</b></i> is used according to OSHS.
2. Control environmental Pollution control	2.1 Environmental pollution <i><b>control measures</b></i> are compiled following standard protocol. 2.2 Procedures for solid waste management are observed according to Environmental Management and Coordination Act 1999 2.3 Methods for minimizing <i><b>noise pollution</b></i> is complied with based on <i>Noise and Excessive Vibration Pollution and Control Regulations, 2009</i>
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 and reducing resource

	consumption are practiced as per the Environmental Management and Coordination Act 1999
4. Evaluate current practices in relation to resource usage	<p>4.1 Information on resource efficiency <b>systems and procedures</b> are collected and provided to the work group where appropriate.</p> <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>
5. Identify Environmental legislations/conventions for environmental concerns	<p>5.1 Environmental <i>legislations/conventions</i> and local ordinances are identified according to the different <i>environmental aspects/impact</i></p> <p>5.2 <i>Industrial standard/environmental practices</i> are described according to the different environmental concerns</p>
6. Implement specific environmental programs	<p>6.1 Programs/Activities are identified according to organizations policies and guidelines.</p> <p>6.2 Individual roles/responsibilities are determined and performed based on the activities identified.</p> <p>6.3 Problems/constraints encountered are resolved in accordance with organizations' policies and guidelines</p> <p>6.4 Stakeholders are consulted based on company guidelines</p>
7. Monitor activities on Environmental protection/Programs	<p>7.1 Activities are periodically monitored and evaluated according to the objectives of the environmental Program</p> <p>7.2 Feedback from stakeholders are gathered and considered in proposing enhancements to the program based on consultations</p> <p>7.3 Data gathered are analyzed based on evaluation requirements</p> <p>7.4 Recommendations are submitted based on the findings</p> <p>7.5 Management support systems are set/established to sustain and enhance the program</p> <p>7.6 Environmental incidents are monitored and reported to concerned/proper authorities</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
1. PPE may include but not limited to:	<ul style="list-style-type: none"><li>• Mask</li><li>• Gloves</li><li>• Goggles</li><li>• Safety hat</li><li>• Overall</li><li>• Hearing protector</li><li>• Safety boots</li></ul>
2. Environmental pollution control measures may include but not limited to:	<ul style="list-style-type: none"><li>• Methods for minimizing or stopping spread and ingestion of airborne particles</li><li>• Methods for minimizing or stopping spread and ingestion of gases and fumes</li><li>• Methods for minimizing or stopping spread and ingestion of liquid wastes</li></ul>
3. Waste management procedures may include but not limited to:	<ul style="list-style-type: none"><li>• Sorting</li><li>• Storing of items</li><li>• Recycling of items</li><li>• Disposal of items</li></ul>
4. Resources may include but not limited to:	<ul style="list-style-type: none"><li>• Electric</li><li>• Water</li><li>• Fuel</li><li>• Telecommunications</li><li>• Supplies</li><li>• Materials</li></ul>
5. Workplace environmental hazards may include but not limited to:	<ul style="list-style-type: none"><li>• Biological hazards</li><li>• Chemical and dust hazards</li><li>• Physical hazards</li></ul>
6. Organizational systems and procedures may include but not limited to:	<ul style="list-style-type: none"><li>• Supply chain, procurement and purchasing</li><li>• Quality assurance</li><li>• Making recommendations and seeking approvals</li></ul>

## **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:

- Observation
- Measuring
- Writing
- Communication
- Analytical
- Monitoring
- Evaluation

### **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
- 3Rs principle
- 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.
- Measurement and recording of current resource usage
- Analysis current work processes to access information and data Analysis of data and information
- Identification of areas for improvement
- Resource consuming processes
- Determination of quantity and nature of resource consumed
- Analysis of resource flow of different parts of the resource flow process
- Use/conversion of resources
- Causes of low efficiency of use
- Increasing the efficiency of resource use
- Inspection of resource use plans
- Regulations/licensing requirements
- Determine benefit/cost for alternative resource sources
- Benefit/costs for different alternatives
- Components of proposals
- Criteria on ranking proposals
- Regulatory requirements
- Proposals for improving resource efficiency
- Implementation of resource efficiency plans
- Procedures in monitor implementation
- Adjustments of implementation plan
- Inspection of new resource usage

## 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"> <li>1.1 Controlled environmental hazard</li> <li>1.2 Controlled environmental pollution</li> <li>1.3 Demonstrated sustainable resource use</li> <li>1.4 Evaluated current practices in relation to resource usage</li> <li>1.5 Demonstrated knowledge of environmental legislations and local ordinances according to the different environmental issues /concerns.</li> <li>1.6 Described industrial standard environmental practices</li> </ul>
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	<p>according to the different environmental issues/concerns.</p> <p>1.7 Resolved problems/ constraints encountered based on management standard procedures</p> <p>1.8 Implemented and monitored environmental practices on a periodic basis as per company guidelines</p> <p>1.9 Recommended solutions for the improvement of the Program</p> <p>1.10 Monitored and reported to proper authorities any environmental incidents</p>
2. Resource Implications	<p>The following resources should be provided:</p> <p>2.1 Workplace with storage facilities</p> <p>2.2 Tools, materials and equipment relevant to the tasks (ex. Cleaning tools, cleaning materials, trash bags, etc.)</p> <p>2.3 PPE</p> <p>2.4 Manuals and references</p> <p>2.5 Legislation, policies, procedures, protocols and local ordinances relating to environmental protection</p> <p>2.6 Case studies/scenarios relating to environmental Protection</p>
3. Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <p>3.1 Observation</p> <p>3.2 Oral questioning</p> <p>3.3 Written test</p> <p>3.4 Interview/Third Party Reports</p> <p>3.5 Portfolio of evidence</p>
4. Context of Assessment	<p>Competency may be assessed:</p> <p>4.1 On-the-job</p> <p>4.2 Off-the –job</p> <p>4.3 During Industrial attachment</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 OCCUPATIONAL SAFETY AND HEALTH PRACTICES

**UNIT CODE:** MED/OS/NUD/BC/07/5/A

### UNIT DESCRIPTION

This unit specifies the competencies required to identify workplace hazards and risk, identify and implement appropriate control measures and implement OSH programs, procedures and policies/ guidelines

### ELEMENTS AND PERFORMANCE CRITERIA

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
<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><b>Bold and italicized terms are elaborated in the Range</b></i></p>
<p>1. Identify workplace hazards and risk</p>	<p>1.1 <i><b>Hazards</b></i> in the workplace are identified <i><b>based their indicators</b></i></p> <p>1.2 Risks and hazards are evaluated based on legal requirements.</p> <p>1.3 <i><b>OSH concerns</b></i> raised by workers are addressed as per legal requirements.</p>
<p>2. Control OSH hazards</p>	<p>2.1 Hazard prevention <i><b>and control measures</b></i> are implemented as per legal requirement.</p> <p>2.2 Risk assessment is conducted and a risk matrix developed based on likely impact.</p> <p>2.3 <i><b>Contingency measures</b></i>, including <i><b>emergency procedures</b></i> during workplace <i><b>incidents and emergencies</b></i> are recognized and established in accordance with organization procedures.</p>
<p>3. Implement OSH programs</p>	<p>3.1 Company OSH program are identified, evaluated and reviewed based on legal requirements.</p> <p>3.2 Company OSH programs are implemented as per legal requirements.</p> <p>3.3 Workers are capacity built on OSH standards and procedures as per legal requirements</p> <p>3.4 <i><b>OSH-related records</b></i> are maintained as per legal requirements.</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
1. Hazards may include but are not limited to:	<ul style="list-style-type: none"><li>• Physical hazards</li><li>• Biological hazards</li><li>• Chemical hazards</li><li>• Ergonomics</li><li>• Psychological factors</li><li>• Physiological factors</li><li>• Safety hazards</li><li>• Unsafe workers' act</li></ul>
2. Indicators may include but are not limited to:	<ul style="list-style-type: none"><li>• Increased of incidents of accidents, injuries</li><li>• Increased occurrence of sickness or health complaints/ symptoms</li><li>• Common complaints of workers related to OSH</li><li>• High absenteeism for work-related reasons</li></ul>
3. Evaluation and/or work environment measurements may include but are not limited to:	<ul style="list-style-type: none"><li>• Health Audit</li><li>• Safety Audit</li><li>• Work Safety and Health Evaluation</li><li>• Work Environment Measurements of Physical and Chemical Hazards</li></ul>
4. OSH issues and/or concerns may include but are not limited to:	<ul style="list-style-type: none"><li>• Workers' experience/observance on presence of work hazards</li><li>• Unsafe/unhealthy administrative arrangements (prolonged work hours, no break time, constant overtime, scheduling of tasks)</li><li>• Reasons for compliance/non-compliance to use of PPEs or other OSH procedures/policies/guidelines</li></ul>

<p>5. Prevention and control measures may include but are not limited to:</p>	<ul style="list-style-type: none"> <li>• Eliminate the hazard</li> <li>• Isolate the hazard</li> <li>• Substitute the hazard with a safer alternative</li> <li>• Use administrative controls to reduce the risk</li> <li>• Use engineering controls to reduce the risk</li> <li>• Use personal protective equipment</li> <li>• Safety, Health and Work Environment Evaluation</li> <li>• Periodic and/or special medical examinations of workers</li> </ul>
<p>6. Safety gears /PPE (Personal Protective Equipment's) may include but are not limited to:</p>	<ul style="list-style-type: none"> <li>• Arm/Hand guard, gloves</li> <li>• Eye protection (goggles, shield)</li> <li>• Hearing protection (ear muffs, ear plugs)</li> <li>• Hair Net/cap/bonnet</li> <li>• Hard hat</li> <li>• Face protection (mask, shield)</li> <li>• Apron/Gown/coverall/jump suit</li> <li>• Anti-static suits</li> <li>• High-visibility reflective vest</li> </ul>
<p>7. Appropriate risk controls</p>	<ul style="list-style-type: none"> <li>• Eliminate the hazard altogether</li> <li>• Isolate the hazard from anyone who could be harmed</li> <li>• Substitute the hazard with a safer alternative</li> <li>• Use administrative controls to reduce the risk</li> <li>• Use engineering controls to reduce the risk</li> <li>• Use personal protective equipment</li> </ul>
<p>8. Contingency measures may include but are not limited to:</p>	<ul style="list-style-type: none"> <li>• Evacuation</li> <li>• Isolation</li> <li>• Decontamination</li> <li>• Emergency personnel</li> </ul>
<p>9. Emergency procedures may include but are not limited to:</p>	<ul style="list-style-type: none"> <li>• Fire drill</li> <li>• Earthquake drill</li> <li>• Basic life support/CPR</li> <li>• First aid</li> <li>• Spillage control</li> <li>• Decontamination of chemical and toxic</li> <li>• Disaster preparedness/management</li> <li>• Set of fire-extinguisher</li> </ul>

<p>10. Incidents and emergencies may include but are not limited to:</p>	<ul style="list-style-type: none"> <li>• Chemical spills</li> <li>• Equipment/vehicle accidents</li> <li>• Explosion</li> <li>• Fire</li> <li>• Gas leak</li> <li>• Injury to personnel</li> <li>• Structural collapse</li> <li>• Toxic and/or flammable vapors emission.</li> </ul>
<p>11. OSH-related Records may include but are not limited to:</p>	<ul style="list-style-type: none"> <li>• Medical/Health records</li> <li>• Incident/accident reports</li> <li>• Sickness notifications/sick leave application</li> <li>• OSH-related trainings obtained</li> </ul>

## 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
- Interpersonal
- Presentation
- Risk assessment
- Evaluation
- Critical thinking
- Problem solving
- Negotiation

### Required Knowledge

The individual needs to demonstrate knowledge of:

- General OSH Principles
- Occupational hazards/risks recognition
- OSH organizations providing services on OSH evaluation and/or work environment measurements (WEM)
- National OSH regulations; company OSH policies and protocols
- Systematic gathering of OSH issues and concerns

- General OSH principles
- National OSH regulations
- Company OSH and recording protocols, procedures and policies/guidelines
- Training and/or counseling methodologies and strategies

## 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"> <li>1.1 Identified hazards in the workplace based their indicators</li> <li>1.2 Evaluated workplace hazards based on legal requirements.</li> <li>1.3 Addressed OSH concerns raised by workers as per legal requirements.</li> <li>1.4 Implemented hazard prevention and control measures as per legal requirement.</li> <li>1.5 Conducted risk assessment as per legal requirement.</li> <li>1.6 Developed risk matrix based on likely impact.</li> <li>1.7 Recognized and established contingency measures in accordance with organization procedures.</li> <li>1.8 Identified, evaluated and reviewed company OSH program based on legal requirements.</li> <li>1.9 Implemented company OSH programs as per legal requirements.</li> <li>1.10 Capacity built workers on OSH standards and procedures as per legal requirements</li> <li>1.11 Maintained OSH-related records as per legal requirements.</li> </ul>
<p>2. Resource Implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> <li>2.1 Access to relevant workplace where assessment can take place</li> <li>2.2 Appropriately simulated environment where assessment can take place</li> </ul>
<p>3. Methods of Assessment</p>	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> <li>3.1 Observation</li> <li>3.2 Oral questioning</li> <li>3.3 Written test</li> </ul>

	<p>3.4 Portfolio of Evidence</p> <p>3.5 Interview</p> <p>3.6 Third party report</p>
4. Context of Assessment	<p>Competency may be assessed:</p> <p>4.1 On-the-job</p> <p>4.2 Off-the –job</p> <p>4.3 During Industrial attachment</p>
5. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>

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## **COMMON UNITS OF COMPETENCY**

## DEMONSTRATE THE KNOWLEDGE OF GENERAL BIOLOGY

UNIT CODE: MED/OS/NUD/CC/01/5/A

### UNIT DESCRIPTION

This unit specifies the competencies required to demonstrate knowledge of general biology. It involves demonstrating the knowledge of terminologies in general biology, types of plant and animal cells and tissues, plant anatomy and physiology, structures of a plant and their functions, knowledge of human body systems, their structures, functions and associated disorders. It also entails demonstrating knowledge of macromolecules and their metabolism, knowledge of enzymes and hormones and knowledge of biochemistry of macronutrient.

### ELEMENTS AND PERFORMANCE CRITERIA

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
These describe the <b>key outcomes</b> which make up <b>workplace function</b> .	These are <b>assessable</b> statements which specify the required level of performance for each of the elements.  <i><b>Bold and italicized terms are elaborated in the Range</b></i>
1. Demonstrate the knowledge of terminologies in general biology	1.1 Relevant <i><b>terminologies in general biology</b></i> are identified as per the relevant literature and resource materials 1.2 Branches in general biology <i>are</i> identified and described as per the relevant literature and resource materials 1.3 Basics of plant and human cells <i>are</i> identified and described as per the relevant literature and resource materials
2. Demonstrate knowledge of types of plant and animal cells and tissues	2.1 Types of plant and animal cells and tissues <i>are</i> identified and described as per the relevant literature and resource materials. 2.2 Structures of plant and animal cells are illustrated and discussed as per the relevant literature and resource materials. 2.3 Roles of plant and animal organelles are described as per the relevant literature and resource materials. 2.4 Plant and animal cell metabolism and reproduction are described as per the relevant literature and resource materials.

<p>3. Demonstrate the knowledge of the plant anatomy and physiology. structures of a plant and their functions</p>	<p>3.1 Plants with nutrition and health potency are identified and described as per work place procedures, relevant literature and resource materials.</p> <p>3.2 The anatomy and physiology of plants with nutrition and health potency (the identified plants) are illustrated and discussed as per work place procedures, relevant literature and resource materials.</p> <p>3.3 The plants with nutrition and health potency (identified plants) are classified into herbs, spices and condiments as per work place procedures, relevant literature and resource materials.</p>
<p>4. Demonstrate the knowledge of the human body systems, their structures, functions and associated disorders.</p>	<p>4.1 The <b>components of the human body systems</b> are identified as per the workplace procedures</p> <p>4.2 Relevant functions of the body s systems identified as per the workplace procedures</p> <p>4.3 Relevant principles of the body s systems to performance of therapy treatment applied as per the workplace procedures</p>
<p>5. Demonstrate the knowledge of macromolecules and their metabolism</p>	<p>5.1 <b>Types of macro molecules</b> and metabolism are identified as per the workplace procedures, relevant literature and resource materials</p> <p>5.2 The hierarchy of molecular organization of cells is illustrated as per the workplace procedures</p> <p>5.3 The structure of the cell and how it is organized to conduct its characteristic chemical functions is outlined based on workplace procedures</p>
<p>6. Demonstrate the knowledge of enzymes and hormones</p>	<p>6.1 The structure of enzymes outlined as per the workplace procedures</p> <p>6.2 The relationship among holoenzymes, apoenzymes and cofactors outlined as per the workplace procedures</p> <p>6.3 The general mechanisms by which enzymes catalyze reactions outlined as per the type of macro molecule</p> <p>6.4 Enzymes classified as per the <b>I.B.U.N</b></p> <p>6.5 Role of enzyme in food processing is described as per relevant literature and resource materials</p> <p>6.6 Isoenzymes and zymogens discussed based on workplace procedures</p> <p>6.7 Functions of hormones in homoeostasis is described as per relevant literature and resource materials</p> <p>6.8 Mechanisms in hormonal physiology is described as per</p>



	relevant literature and resource materials
7. Demonstrate the knowledge of biochemistry of macronutrient	<p>7.1 Terminologies in biochemistry of macronutrients are identified and described as per resource materials</p> <p>7.2 Biochemistry of carbohydrates is described as per resource materials</p> <p>7.3 Biochemistry of proteins is described as per resource materials</p> <p>7.4 Biochemistry of lipids is described as per resource materials</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.

Variables	Range
	May include but not limited to:
1. Anatomical and physiological terminology may include but are not limited to:	<ul style="list-style-type: none"> <li>• Proximal</li> <li>• Distal</li> <li>• Cranial</li> <li>• Anterior</li> <li>• Posterior</li> </ul>
2. Components of the human body systems may include but are not limited to:	<ul style="list-style-type: none"> <li>• Cardiovascular system</li> <li>• Respiratory system</li> <li>• Renal system</li> <li>• Musculoskeletal system</li> <li>• Reproductive system</li> <li>• Skin</li> <li>• Gastro intestinal</li> <li>• Central nervous system</li> </ul>
3. Staining methods may include but are not limited to:	<ul style="list-style-type: none"> <li>• Hematoxylin and eosin</li> <li>• Uranyl acetate and lead citrate</li> </ul>

4. Tissue location may include but are not limited to:	<ul style="list-style-type: none"> <li>• Epithelial</li> <li>• Connective</li> <li>• Adipose</li> <li>• Bone</li> <li>• Nerve and muscle</li> </ul>
5. Types of cell division may include but are not limited to:	<ul style="list-style-type: none"> <li>• Mitosis</li> <li>• Meiosis</li> </ul>
6. Process of cell division may include but are not limited to:	<ul style="list-style-type: none"> <li>• Interphase</li> <li>• Prophase</li> <li>• Prometaphase</li> <li>• Anaphase</li> <li>• Telophase</li> <li>• Cytokinesis</li> </ul>

## 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:

- Organizing skills
- Analytical skills
- Negotiation skills
- Interpersonal skills
- Communication skills
- Evaluation skills
- Problem solving
- Critical thinking

### Required Knowledge

The individual needs to demonstrate knowledge of:

- Basic anatomy
- Anatomical terminologies
- Scope of anatomy

## 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 Identified relevant anatomical and physiological terminology as per the anatomical position. 1.2 Applied relevant anatomical and physiological terminology to daily tasks as per the workplace procedures 1.3 Identified cell types as per the workplace procedures 1.4 Identified components of a human cell as per the workplace procedures 1.5 Outlined processes of cell division as per the SOP 1.6 Described the composition of cytoplasm as per the workplace procedures 1.7 Performed direct observation based on workplace procedures 1.8 Identified histochemical methods based on the material available 1.9 Identified chemical methods based on the material available 1.10 Identified physical methods based on the material available 1.11 Identified Staining methods as per workplace procedures 1.12 Identified immunohistochemical methods based on the material available 1.13 Performed X-ray diffraction as per the workplace procedures 1.14 Outlined tissue location as per the workplace procedures 1.15 Identified embryonic tissues as per the tissue location 1.16 Classified tissues as per the tissue location
2. Resource Implications	The following resources must be provided:  2.1 Functional Pharmaceutical technology system
3. Methods of Assessment	Competency may be assessed through:  3.1 Written tests 3.2 Third party reports

	3.3 Oral questioning 3.4 Interview 3.5 Observation
4. Context of Assessment	Assessment could be conducted: 4.1 On-the-job 4.2 Off-the-job 4.3 During industrial attachment
5. Guidance information for assessment	Holistic assessment with related units in the sector

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## DEMONSTRATE KNOWLEDGE OF FOOD MICROBIOLOGY TECHNIQUES

UNIT CODE: MED/OS/NUD/CC/02/5/A

### UNIT DESCRIPTION

This unit specifies the competencies required to demonstrate knowledge of food microbiology techniques. It involves demonstrating the knowledge of microorganisms in foods and food environments, physiology, genetics, biochemistry and behaviour of microorganisms, microbiology of food fermentation, microbiological aspects of food safety, and methods of detection, identification and enumeration of food microorganisms.

### ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the <b>key outcomes</b> which make up <b>workplace function</b> .	These are <b>assessable</b> statements which specify the required level of performance for each of the elements. <i><b>Bold and italicized terms are elaborated in the Range</b></i>
1. Demonstrate the knowledge of microorganisms in food and food environment	1. 1 Terminologies in in food microbiology are identified and described as per resource materials 1. 2 Basic types of food microorganism are identified and described as per resource materials 1. 3 Roles of microorganisms in food safety and spoilage are identified and described as per resource materials 1. 4 Use of microscope are applied as per workplace guidelines
2. Demonstrate the knowledge of physiology, genetics, biochemistry and behaviour of food microorganisms	2.1 Physiology, genetics and biochemistry of microorganisms are identified and described as per resource materials 2.2 Bacterial anatomy is described as per resource materials 2.3 Factors that influence growth and activity of food microorganism are identified and described as per resource materials 2.4 The growth pattern of a typical bacterial colony is described as per resource materials 2.5 The gram stain method and AFB test are demonstrated and described as per resource materials

3. Demonstrate the knowledge on microbiology of food fermentation	<p>3.1 Terminologies in food fermentation and its importance are identified and described as per resource materials</p> <p>3.2 Microorganisms in fermentation process are identified and described as per resource materials</p> <p>3.3 Fermentation processes in different types of food are identified and described as per resource materials</p>
4. Demonstrate the knowledge of microbiological aspects of food safety	<p>4.1 Terminologies in microbial aspects in food safety are identified and described as per resource materials</p> <p>4.2 Microbial aspects of food safety during production, processing and labelling, food handling distribution and storage, food preparation and use are identified and described as per resource materials</p>
5. Demonstrate the knowledge on methods of detection, identification and enumeration of food microorganism	<p>5.1 Terminologies in basic laboratory equipment and materials are identified and described as per resource materials</p> <p>5.2 Methods of detection, identification and enumeration of microorganisms are identified and described as per resource materials</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.

Variables	Range
1. Types of immunity may include but are not limited to:	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• Innate</li> <li>• Adaptive</li> </ul>

## 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:

- Organizing skills
- Analytical skills
- Negotiation skills

- Interpersonal skills
- Communication skills
- Evaluation skills
- Problem solving
- Critical thinking

### Required Knowledge

The individual needs to demonstrate knowledge of:

- The role of microbiology in pharmacy and related biomedical sciences
- The nature and appropriate environmental conditions for survival of microorganisms
- Diseases and physiological disorders associated with microorganisms
- Appropriate treatment and management of the various diseases caused by microorganisms
- Various laboratory tests in the diagnosis of diseases

### 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> <p>1.1 Identified and described terminologies in in food microbiology as per resource materials</p> <p>1.2 Identified and described basic types of food microorganism as per resource materials</p> <p>1.3 Identified and described roles of microorganisms in food safety and spoilage as per resource materials</p> <p>1.4 Used a microscope as per workplace guidelines</p> <p>1.5 Identified and described physiology, genetics and biochemistry of microorganisms as per resource materials</p> <p>1.6 Described bacterial anatomy as per resource materials</p> <p>1.7 Identified and described factors that influence growth and activity of food microorganism as per resource materials</p> <p>1.8 Described the growth pattern of a typical bacterial colony as per resource materials</p> <p>1.9 Demonstrated and described the gram stain method and AFB test as per resource materials</p> <p>1.10 Identified and described terminologies in food</p>
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	<p>fermentation and its importance as per resource materials</p> <p>1.11 Identified and described microorganisms in fermentation process as per resource materials</p> <p>1.12 Identified and described fermentation processes in different types of food as per resource materials</p> <p>1.13 Identified and described terminologies in microbial aspects in food safety as per resource materials</p> <p>1.14 Identified and described microbial aspects of food safety during production, processing and labelling, food handling distribution and storage, food preparation and use as per resource materials</p> <p>1.15 Identified and described terminologies in basic laboratory equipment and materials as per resource materials</p> <p>1.16 Identified methods of detection, identification and enumeration of microorganisms as per resource materials</p>
2. Resource Implications	<p>The following resources must be provided:</p> <p>2.1 Functional Pharmaceutical Technology system</p>
3. Methods of Assessment	<p>Competency may be assessed through:</p> <p>3.1 Written tests</p> <p>3.2 Third party reports</p> <p>3.3 Oral questioning</p> <p>3.4 Interview</p> <p>3.5 Observation</p>
4. Context of Assessment	<p>Assessment could be conducted:</p> <p>4.1 On-the-job</p> <p>4.2 Off-the-job</p> <p>4.3 During industrial attachment</p>
5. Guidance information for assessment	<p>Holistic assessment with related units in the sector</p>



## MANAGE FOOD PROCESSING, SAFETY AND HYGIENE

**UNIT CODE:** MED/OS/NUD/CC/03/5/A

### Unit Description

This unit specifies the competencies required to manage food processing, safety and hygiene. It involves identifying and describing terminologies in food processing, safety and hygiene, describing principles in food processing, preservation and safety and demonstrating knowledge in food quality, safety and hygiene.

### ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the <b>key outcomes</b> which make up <b>workplace function</b> .	These are <b>assessable</b> 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 describe terminologies in food processing, safety and hygiene	1. 1Terminologies in food processing, preservation and food safety are identified and described as per resource materials 1. 2Aims and importance of food processing, preservation and safety are identified and described as per resource materials
2. Describe principles in food processing, preservation and safety	2.1 Principles in food processing are identified and described as per resource materials 2.2 Methods of food processing and preservation are identified and described as per resource materials 2.3 Effects of food processing and preservation techniques on food storage sensory and nutrition properties of food are identified and described as per resource materials 2.4 <i>Traditional and modern methods in food processing</i> and preservation for different food categories are identified and described as per resource materials
1. Demonstrate knowledge in food quality, safety and hygiene	4.1 Quality control of food and food safety during processing are identified and described as per resource materials 4.2 <i>HACCP</i> is described and demonstrated as per resource materials, organizational guidelines, policies and guidelines 4.3 Food hygiene are identified and described as per resource materials

## 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.

<b>Variables</b>	<b>Range</b> May include but not limited to:
1. Traditional and modern methods in food processing may include but are not limited to:	<ul style="list-style-type: none"><li>• Traditional methods: smoking, sun-drying, salting, cooking and reheating</li><li>• Modern methods: refrigeration/freezing, irradiation, dehydration, freeze drying, pickling, pasteurization, sterilization</li></ul>

## 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:

- Organizing skills
- Analytical skills
- Negotiation skills
- Interpersonal skills
- Communication skills
- Evaluation skills
- Problem solving
- Critical thinking

### Required Knowledge

The individual needs to demonstrate knowledge of:

- Methods of food processing and preservation
- Knowledge in food microbiology
- Personal hygiene, food hygiene, kitchen hygiene and environmental hygiene

## 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"> <li>1.1 Identified and described terminologies in food processing, preservation and food safety as per resource materials</li> <li>1.2 Identified and described principles of food processing as per resource materials</li> <li>1.3 Identified and described methods of food processing and preservation as per resource materials</li> <li>1.4 Identified and described effects of food processing and preservation techniques on food storage sensory and nutrition properties of food as per resource materials</li> <li>1.5 Identified and described traditional and modern methods of food processing and preservation for different food categories as per resource materials</li> <li>1.6 Conducted food quality control and food safety during processing as per resource materials</li> <li>1.7 Demonstrated HACCP standards as per resource materials, organizational guidelines, policies and guidelines</li> </ul>
<p>2. Resource Implications</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>2.1 Functional kitchen</li> <li>2.2 Functional food lab</li> </ul>
<p>3. Methods of [Assessment]</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> <li>3.1 Written tests</li> <li>3.2 Third party reports</li> <li>3.3 Oral questioning</li> <li>3.4 Interview</li> <li>3.5 Observation</li> </ul>
<p>4. Context of Assessment</p>	<p>Assessment could be conducted:</p> <ul style="list-style-type: none"> <li>4.1 On-the-job</li> <li>4.2 Off-the-job</li> <li>4.3 During industrial attachment</li> </ul>
<p>5. Guidance information for assessment</p>	<p>Holistic assessment with related units in the sector</p>

## **CORE UNITS OF COMPETENCY**

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## APPLY NUTRITION IN EMERGENCY

UNIT CODE MED/OS/NUD/CR/01/5/A

### UNIT DESCRIPTION

This unit specifies the competencies required to apply nutrition in emergency. It involves conducting rapid assessment on the nutrition situation, selecting food and nutrition emergency responses and plan, providing nutrition and health interventions and monitoring implementation of intervention. It also includes documenting nutritional intervention during emergencies and demonstrating knowledge on food and nutrition security in emergencies.

### ELEMENTS AND PERFORMANCE CRITERIA

<b>ELEMENT</b> These describe the <b>key outcomes</b> which make up <b>workplace function</b> .	<b>PERFORMANCE CRITERIA</b> These are <b>assessable</b> statements which specify the required level of performance for each of the elements. <i><b>Bold and italicized terms are elaborated in the range.</b></i>
1. Conduct rapid assessment on the nutrition situation in emergency	1.1 Anthropometric assessment is carried out as per work place procedures 1.2 Physical and clinical assessment is carried out as per work place procedures 1.3 Nutrition condition is documented as per work place procedures
2. Select food and nutrition emergency responses and plan	2.1 Nutrition status is determined as per client nutrition history 2.2 Therapeutic feeding program is designed as per type of feeding 2.3 Health status of clients are determined as per work place procedures
3. Provide nutrition and health interventions	3.1 Nutrition health education as per patient nutrition needs 3.2 Provision of therapeutic feeds as per work place procedures 3.3 Medical/nutrition underlying causes are checked as per patient nutrition needs
4. Monitor implementation of interventions	4.1 Outcomes of nutrition related diet history are evaluated as per client nutrition needs 4.2 <i><b>Anthropometric measurement</b></i> outcomes are addressed as per clients requirement 4.3 Physical and clinical outcomes are evaluated as per nutrition diagnosis 4.4 Outcome of therapeutic feeds is assessed as per work place procedures

5. Document nutritional intervention during emergencies	5.1 MOH registers are obtained as per work place procedures 5.2 WFP registers are obtained as per work place procedures
6. Demonstrate knowledge on food and nutrition security in emergency	6.1 Terminologies in food and nutrition security in emergency are described as per relevant resource materials 6.2 Assessment of food and nutrition security in emergency is done as per relevant resource materials as well as MOH, FAO, WHO and <i>SPHERE</i> guidelines 6.3 Components/pillars of food and nutrition security are described as per MOH, FAO, WHO and <i>SPHERE</i> guidelines 6.4 Food and nutrition security policies are discussed relevant resource materials as well as MOH, FAO, WHO and <i>SPHERE</i> guidelines 6.5 Mitigation of food and nutrition insecurity in emergencies is discussed as per MOH, FAO, WHO and <i>SPHERE</i> guidelines 6.6 Food and nutrition surveillance systems in emergency are discussed as per MOH, FAO, WHO and <i>SPHERE</i> guidelines

### **RANGE**

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

<b>Variable</b>	<b>Range</b>
1. Anthropometric measurement may include but are not limited to:	1.1 Weighing scales 1.2 Measuring tapes 1.3 Charts 1.4 Height board

## REQUIRED KNOWLEDGE AND UNDERSTANDING

The individual needs to demonstrate knowledge of:

### Knowledge

- Anatomy and physiology
- WHO guidelines
- WFP guidelines
- Macro and micro nutrients

### Skills

The individual needs to demonstrate the following skills:

- ICT
- Communication
- Information technology
- Analysis
- Synthesis and evaluation
- Decision making
- Management
- Leadership

## 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: Demonstrates; 1. 1Ability to conduct rapid assessment on the nutrition situation 1. 2Ability to select food and nutrition emergency responses and plan 1. 3Ability to provide nutrition and health interventions 1. 4Ability to monitor implementation of interventions 1. 5Ability to document nutritional intervention during emergencies
2. Resource Implications	The following resources must be provided: 2.1 Human laboratory
3. Methods of Assessment	Competency may be accessed through: 3.1 Written tests 3.2 Oral questioning

	<p>3.3 Third party reports</p> <p>3.4 Case studies</p>
4. Context of Assessment	<p>Competency may be assessed:</p> <p>4.1 On the job</p> <p>4.2 Off the job</p> <p>4.3 In work placement (attachment)</p> <p>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 subsector, workplace and job roles is recommended.</p>

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## APPLY PRINCIPLES OF HUMAN NUTRITION

**UNIT CODE:** MED/OS/NUD/CR/02/5/A

### UNIT DESCRIPTION

This unit specifies the competencies required to apply principles of human nutrition. It involves classifying different nutrients, demonstrating understanding of food metabolism and understanding of the role of nutrition in disease occurrence and management. It also includes identifying factors that place client at nutritional risk and undertaking nutrition monitoring.

### ELEMENTS AND PERFORMANCE CRITERIA

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
These describe the <b>key outcomes</b> which make up <b>workplace function</b> .	These are <b>assessable</b> statements which specify the required level of performance for each of the elements. <i><b>Bold and italicized terms are elaborated in the range.</b></i>
1. Classify different nutrients	1.1 Determine nutrient needs as per client nutritional requirements 1.2 Macro and micro nutrients are assessed as per nutritional composition 1.3 Types of Macro and micro nutrients are categorized as per nutritional standard requirement 1.4 Concepts and basic principles of nutrition and dietetics are determined as per nutritional standards 1.5 Energy levels of different foods are determined as per client needs and standard nutritional requirement
2. Demonstrate understanding of food metabolism	2.1 Describe Digestion in the GIT 2.2 Determine GIT sites of secretions and absorption 2.3 Explain factors affecting digestion, absorption and utilization. 2.4 Explain factors affecting bioavailability of macro and micro nutrients. 2.5 Assess factors that hinder metabolism.
3. Understand role of nutrition in disease occurrence and management	3.1 Prevalence of nutrition implications in disease occurrence is assessed 3.2 Client's nutrition assessment is evaluated as per standardized operating procedures 3.3 Dietary management in metabolic disorders and malnutrition is determined as per individual nutrition requirements

	3.4 Nutritional support is explored as per client requirement
4. Identify factors that place client at nutritional risk	<p>4.1 Problems which may affect the client's ability to eat or drink are reported to the dietitian and/or other relevant health professional, according to organization policies and procedure</p> <p>4.2 Client food intake is documented and reported according to organization policies and procedures</p> <p>4.3 Feedback about changes to nutrition support requirements are provided to catering/food services</p> <p>4.4 Client is informed of the dietary recommendation as per dietary requirements</p>
5. Undertake nutrition monitoring	<p>5.1 The nutrition status of clients is identified as per standard/validated tools and nutritional indicators</p> <p>5.2 Systems designed by a dietitian are followed to monitor client nutritional status</p> <p>5.3 The progress of client nutritional status that is reported to the dietitian, and/or other health professional is evaluated according to standard protocols and timeframes</p>

## RANGE

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

Variable	Range
1. Nutrients may include but are not limited to:	<ul style="list-style-type: none"> <li>• Carbohydrates</li> <li>• Proteins</li> <li>• Lipids</li> <li>• Vitamins</li> <li>• Minerals</li> <li>• Water</li> </ul>

## REQUIRED KNOWLEDGE AND UNDERSTANDING

The individual needs to demonstrate knowledge of:

### Knowledge

- Nutrition and disease
- Anatomy and physiology
- Food nutrient interaction.

### Skills

The individual needs to demonstrate the following skills:

- ICT
- Communication
- Information technology
- Analysis
- Synthesis and evaluation
- Decision making
- Management
- Leadership

## 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: Demonstrates; 1. 1Ability to assist client with meal selection 1. 2Ability to prepare and deliver nutrition support services 1. 3Ability to comply with personal hygiene standards 1. 4Ability to support the client with acceptance of nutrition care plan 1. 5Ability to identify factors that place client at nutritional risk 1. 6Ability to undertake nutrition monitoring
2. Resource Implications	The following resources must be provided: 2.1 Library
3. Methods of Assessment	Competency may be accessed through: 3.1 Written tests 3.2 Oral questioning 3.3 Third party reports 3.4 Case studies

4. Context of Assessment	Competency may be assessed: <ul style="list-style-type: none"> <li>4.1 On the job</li> <li>4.2 Off the job</li> <li>4.3 In work placement (attachment)</li> </ul> Off the job assessment must be undertaken in a closely simulated workplace environment
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry subsector, workplace and job roles is recommended.

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## CONDUCT NUTRITION CARE PROCESS

**UNIT CODE:** MED/OS/NUD/CR/03/5/A

### UNIT DESCRIPTION

This unit specifies the competencies required to conduct nutrition care process. It involves carrying out nutrition assessment, conducting nutrition diagnosis and prescriptions for nutrition interventions, conducting nutrition monitoring and evaluation for the entire nutrition care process.

### ELEMENTS AND PERFORMANCE CRITERIA

<b>ELEMENT</b> These describe the <b>key outcomes</b> which make up <b>workplace function</b> .	<b>PERFORMANCE CRITERIA</b> These are <b>assessable</b> statements which specify the required level of performance for each of the elements. <i><b>Bold and italicized terms are elaborated in the range.</b></i>
1. Carry out nutrition assessment	1.1 Anthropometric measurements methods and tools determined as per resource materials, user needs, policies and guidelines 1.2 Biochemical assessments are identified , interpreted and evaluated as per resource materials, biological variations/biomarkers, user needs, policies and guidelines 1.3 Clinical and physical assessments are identified and determined as per resource materials, user needs, indicators, policies and guidelines 1.4 Dietary assessment is conducted as per resource materials, user needs, policies and guidelines 1.5 Socio-economic assessment is done as per resource materials, user needs, policies and guidelines, patients file 1.1 Functionality assessment is done as per resource materials, user needs, policies and guidelines, patients file
2. Conduct nutrition diagnosis	1.1 Underlying medical condition of the client are determined as per the patients file 1.2 Nutrition problems of the client are labeled and classified as per patients/clients history, file

	<p>1.3 Etiology of conditions are identified and described as per resource material, patient history, policies and guidelines</p> <p>1.4 Signs and symptoms of the conditions are identified and described as per, physical observations, resource materials, patient file, policies and guidelines.</p> <p>1.5 Nutrition diagnosis is determined as per results of anthropometric measurements, biochemical, clinical signs and symptoms, dietary, socio-economic and functional assessments.</p>
3. Conduct prescriptions for nutrition interventions	<p>1.1 Nutrition needs are prioritized and addressed as per the nutrition diagnosis</p> <p>1.2 Appropriate nutrition interventions are identified and selected as per clients/patients nutrition needs, resource materials, policies and</p> <p>1.3 Diet plans are designed as per clients/patients nutrition needs, policies and guidelines.</p> <p>1.4 Designed care plans are implemented as per intervention plans, resource materials, policies and guidelines</p>
4. Conduct monitoring dietary assessment	<p>4.1 Daily monitoring of the patients uptake and response to the interventions done as per intervention plan, resource materials, policies and guidelines</p> <p>4.2 Nutrition prescriptions and documentation are done as per intervention plan, resource materials, policies and guidelines</p>
5. Conduct evaluation for the entire nutrition care process	<p>5.1 Outcomes of the entire nutrition care process are assessed as per plans, patients response, user needs, resource materials, policies and guidelines</p> <p>5.2 Appropriate decisions are made and documented as per plans, patients response, user needs, resource materials, policies and guidelines</p>

## RANGE

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

Variable	Range
1. Errors may include but are not limited to:	<ul style="list-style-type: none"><li>• Systematic</li><li>• Random</li></ul>
2. Dietary assessment method may include but are not limited to:	<ul style="list-style-type: none"><li>• Direct</li><li>• Indirect</li></ul>

## REQUIRED KNOWLEDGE AND UNDERSTANDING

The individual needs to demonstrate knowledge of:

### Knowledge

- Anthropometric tools
- Anatomy and physiology
- Biochemical analysis
- Food, nutrients and diseases

### Skills

The individual needs to demonstrate the following skills:

- ICT
- Communication
- Information technology
- Analysis
- Synthesis and evaluation
- Decision making
- Management
- Leadership
- Interpretation
- Numeracy

## 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 Carried out nutrition assessment 1. 2 Conducted nutrition diagnosis 1. 3 Conducted prescriptions for nutrition interventions 1. 4 Conducted monitoring dietary assessment 1. 5 Conducted evaluation for the entire nutrition care process
2. Resource Implications	The following resources must be provided: 2.1 PPES 2.2 Assessment location 2.3 Fully equipped skills laboratory 2.4 Nutrition equipment's 2.5 Fully equipped kitchen 2.6 Feeding simulators and food models
3. Methods of Assessment	Competency may be accessed through: 3.1 Written tests 3.2 Oral questioning 3.3 Third party reports 3.4 Case studies
4. Context of Assessment	Competency may be assessed: 4.1 On the job 4.2 Off the job 4.3 In work placement (attachment) Off the job assessment must be undertaken in a closely simulated workplace environment
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry subsector, workplace and job roles is recommended.



## PLAN AND MANAGE MEALS

**UNIT CODE:** MED/OS/NUD/CR/04/5/A

### UNIT DESCRIPTION

This unit specifies the competencies required to plan and manage meals. It involves determining client nutritional needs, assisting client with meal selection, formulating diet recipes and menu and preparing formulated meals. It also includes assessing food safety and hygiene and documenting meal planning and management.

### ELEMENTS AND PERFORMANCE CRITERIA

<b>ELEMENT</b> These describe the <b>key outcomes</b> which make up <b>workplace function</b> .	<b>PERFORMANCE CRITERIA</b> These are <b>assessable</b> statements which specify the required level of performance for each of the elements. <i><b>Bold and italicized terms are elaborated in the range.</b></i>
1. Determine client nutritional needs	1.1 Client diet history is obtained as per work place procedures 1.2 Client medical history is obtained as per work place procedure 1.3 Client biochemical analysis is carried out as per work place procedures 1.4 Client clinical assessment is carried out as per client medical condition
2. Assist client with meal selection	2.1 Client food preferences are recorded and acted upon according to organization procedures 2.2 Client are advised on meal choices as per care plan developed by a dietitian or other relevant health professional 2.3 Client are assisted with marking menus, placing of meal orders and/or selection of meal as per client requests
3. Formulate diet recipes and menu	3.1 Client daily nutrition requirement are determined as per client nutrition needs 3.2 Guide on appropriate menu as per client nutrition needs 3.3 Food ingredients are selected as per nutrition requirement 3.4 Recipe is prepared as per nutritional requirements
4. Prepare formulated meals	4.1 Recipe is obtained as per client nutrition needs 4.2 Selected ingredients are obtained as per client need 4.3 Meal is prepared as per menu

5. Asses food safety and hygiene	5.1 Nutrition support services are prepared according to food safety program 5.2 Processes and practices that are not consistent with the food safety program are identified and reported as per work place procedures 5.3 Corrective action is taken according to the food safety program 5.4 Nutrition support information or items are supplied according to organization procedures 5.5 Out of date nutrition support supplements and/or outdated nutrition support information are discarded as per work place procedures 5.6 Personal hygiene requirements of the food safety program are identified as per work place procedures 5.7 Health conditions and/or illness are reported according to the food safety program 5.8 PPES for food handling tasks are worn according to the food safety plan
6. Document meal planning and management	6.1 <b>Registers</b> are availed as per work place procedures 6.2 Dietary regime is availed as per work place procedures 6.3 Patient file is maintained as per work place policy

### RANGE

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

Variable	Range
1. Registers may include but are not limited to:	May include but not limited to: <ul style="list-style-type: none"> <li>• Diet requisition</li> <li>• Diet distribution</li> <li>• Menu cards</li> <li>• Diet prescriptions</li> </ul>

### REQUIRED KNOWLEDGE AND UNDERSTANDING

The individual needs to demonstrate knowledge of:

#### Knowledge

- Nutrition heath education and counselling
- Diet therapy

- Reference charts
- Nutrition supplements
- Nutrient drug interaction

### Skills

The individual needs to demonstrate the following skills:

- ICT
- Communication
- Information technology
- Analysis
- Synthesis and evaluation
- Decision making
- Management
- Leadership

### 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: Demonstrates; 1. 1Ability to determine client nutritional needs 1. 2Ability to assist client with meal selection 1. 3Ability to formulate diet recipes and menu 1. 4Ability to prepare formulated meals 1. 5Ability to asses food safety and hygiene 1. 6Ability to document meal planning and management
2. Resource Implications	The following resources must be provided: 2.1 Functional kitchen 2.2 Food service area(restaurant) 2.3 Food lab
3. Methods of Assessment	Competency may be accessed through: 3.1 Written tests 3.2 Oral questioning 3.3 Third party reports 3.4 Case studies
4. Context of Assessment	Competency may be assessed: 4.1 On the job

	<p>4.2 Off the job</p> <p>4.3 In work placement (attachment)</p> <p>Off the job assessment must be undertaken in a closely simulated workplace environment</p>
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry subsector, workplace and job roles is recommended.

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## CONDUCT COMMUNITY HEALTH AND NUTRITION EDUCATION AND COUNSELLING

**UNIT CODE:** MED/OS/NUD/CR/05/5/A

### UNIT DESCRIPTION

This unit specifies the competencies required to conduct community health and nutrition education and counseling. It involves assessing concepts of counselling, evaluating patients' response to nutritional care plan, exploring dietary modifications and supporting the client with acceptance of nutrition care plan. It also includes demonstrating knowledge in nutrition during Infancy (0-24 months).

### ELEMENTS AND PERFORMANCE CRITERIA

<b>ELEMENT</b> These describe the <b>key outcomes</b> which make up <b>workplace function</b> .	<b>PERFORMANCE CRITERIA</b> These are <b>assessable</b> statements which specify the required level of performance for each of the elements. <i><b>Bold and italicized terms are elaborated in the range.</b></i>
1. Asses concepts of counselling	1.1 <b><i>Counselling techniques</i></b> are identified as per work place procedures 1.2 Counselling environment is identified as per work place procedures 1.3 Ethical principles of counselling are observed as per work place policy
2. Evaluate patients' response to nutritional care plan	2.1 Client dietary compliance is assessed as per work place procedure 2.2 Client knowledge on recommended diet is tested as per work place procedures 2.3 Counselling goals are monitored as per work place policy
3. Explore dietary modifications	3.1 Critical nutrition actions are observed as per work place procedures 3.2 Diet recommendation are given as per work place procedures 3.3 Result of nutrition assessment are interpreted as per work place policy
4. Support the client with acceptance of nutrition care plan	4.1 The acceptability, tolerance and consumption of meals by the client are reported to the dietitian or relevant health professional 4.2 Problems which may lead to poor acceptance and/or tolerance of the nutrition care plan by client are reported to the dietitian 4.3 Information regarding nutrition care plan is provided to client when appropriate and as directed by dietitian or relevant health

	<p>professional</p> <p>4.4 Feedback about changes to food preferences and nutrition care are provided to catering/food services and to dietitians</p>
5. Demonstrate knowledge in nutrition during Infancy(0-24 months)	<p>5.1 Nutrition related terminologies in infancy are identified as per the existing policies and guideline</p> <p>5.2 Nutrition requirements for infants 0-6 months/breast feeding indicators are described as per MOH, WHO/UNICEF policies and guidelines</p> <p>5.3 Breast feeding in vulnerable situations and in the context of HIV and AIDS are describes as per MOH, WHO/UNICEF policies and guidelines</p> <p>5.4 Initiatives to promote good breast-feeding practices are identified and described as per MOH, WHO/UNICEF policies and guidelines</p> <p>5.5 Nutrition requirements and need of infants 0-6 months are identified and described as per MOH, WHO/UNICEF policies and guidelines</p> <p>5.6 Nutrition requirements and feeding of infants 9 months to 11 months are described as per MOH, WHO/UNICEF policies and guidelines</p> <p>5.7 Nutrition requirements and feeding of infants 12 months to 24 months are described as per MOH, WHO/UNICEF policies and guidelines</p>

### RANGE

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

Variable	Range
	May include but not limited to:
1. Counselling techniques may include but are not limited to:	<p>1.1 Family therapy</p> <p>1.2 Cognitive distortion</p> <p>1.3 Cognitive behavioral therapy</p> <p>1.4 Communication skill</p>

### REQUIRED KNOWLEDGE AND UNDERSTANDING

The individual needs to demonstrate knowledge of:

#### Knowledge

- Etiology

- Anatomy and physiology
- Macro and micro nutrients
- Nutrition and disease

### Skills

The individual needs to demonstrate the following skills:

- ICT
- Communication
- Information technology
- Analysis
- Synthesis and evaluation
- Decision making
- Management
- Leadership

### 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: Demonstrates; 1. 1Ability to asses' concepts of counselling 1. 2Ability to evaluate patients' response to nutritional care plan 1. 3Ability to explore dietary modifications 1. 4Ability to support the client with acceptance of nutrition care plan
2. Resource Implications	The following resources must be provided: 2.1 Library 2.2 Skills lab 2.3 Nutrition counselling room 2.4 Food models
3. Methods of Assessment	Competency may be accessed through: 3.1 Written tests 3.2 Oral questioning 3.3 Third party reports 3.4 Case studies
4. Context of Assessment	Competency may be assessed: 4.1 On the job

	4.2 Off the job 4.3 In work placement (attachment) Off the job assessment must be undertaken in a closely simulated workplace environment
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry subsector, workplace and job roles is recommended.

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## APPLY DIETETIC PRINCIPLES

**UNIT CODE:** MED/OS/NUD/CR/6/5/A

### Unit Description

This unit specifies the competencies required apply dietetic principles. It involves demonstrating understanding of modified diets in the management of non-communicable and communicable diseases, management of malnutrition and micronutrient deficiencies of public health concerns, enteral and parenteral nutrition, surgery, trauma and burns management and palliative and hospice care. It also includes demonstrating understanding of nutrient-drug interactions.

### ELEMENTS AND PERFORMANCE CRITERIA

<b>ELEMENT</b> These describe the <b>key outcomes</b> which make up <b>workplace function</b> .	<b>PERFORMANCE CRITERIA</b> These are <b>assessable</b> statements which specify the required level of performance for each of the elements. <i><b>Bold and italicized terms are elaborated in the range.</b></i>
1. Identify terminologies in dietetics	1. 1 Terminologies in dietetics are identified and described as per resource materials, policies and guidelines 1. 2 Normal and modified diets are described as per resource materials, policies and guidelines
2. Demonstrate understanding of modified diets in the management of non-communicable and communicable diseases	2.1 Diet modifications in the management of non-communicable disorders are described as per relevant resource materials and work procedure. 2.2 Diet modification in the management of communicable disorders are described as per the relevant resource materials and work procedures 2.3 Modified diets are produced as per work procedures and relevant resource materials
3. Demonstrate understanding in the management of malnutrition and micronutrient deficiencies of public health concerns	3.1 Management of <b>SAM</b> and <b>MAM</b> are described as per <b>IMAM</b> guidelines and other resource materials 3.2 Management of overweight and other eating disorders is described as per work procedures, MOH, WHO and other relevant resource materials 3.3 Roles of nutrient supplements and fortified foods in the management of micronutrient deficiencies of public health concerns are discussed as per relevant resource materials and work procedures

<p>4. Demonstrate understanding in enteral nutrition</p>	<p>4.1 Terminologies in enteral nutrition are identified and described as per resource materials, policies and guidelines</p> <p>4.2 Tube feeding/enteral nutrition routes are identified and described as per resource materials, policies and guidelines</p> <p>4.3 Types of enteral formulas are identified and described as per resource materials, policies and guidelines</p>
<p>5. Demonstrate understanding in parenteral nutrition</p>	<p>5.1 Terminologies in parenteral nutrition are identified and described as per resource materials, policies and guidelines</p> <p>5.2 Parenteral nutrition routes are identified and described as per resource materials, policies and guidelines</p> <p>5.3 Administration of parenteral nutrition are identified and described as per resource materials, policies and guidelines</p> <p>5.4 Complications of parenteral nutrition and their nutritional management are identified and described as per resource materials, policies and guidelines</p>
<p>6. Demonstrate understanding in nutritional management of surgery, trauma, and burn</p>	<p>6.1 Terminologies in surgery, trauma and burns are identified and described as per resource materials, policies and guidelines</p> <p>6.2 Burns pathophysiology and their nutritional management are identified and described as per resource materials, policies and guideline</p> <p>6.3 Surgery nutrition implications of surgery and management are identified and described as per resource materials, policies and guidelines</p>
<p>7. Demonstrate understanding of palliative and hospice care</p>	<p>7.1 Terminologies in palliative and hospice care are identified and described as per resource materials, policies and guidelines</p> <p>7.2 Nutrition support during palliative and hospice care are identified and described as per resource materials, policies and guidelines.</p>
<p>8. Demonstrate understanding in nutrient drug interactions</p>	<p>8.1 Terminologies in nutrient drug interactions are identified and described as per resource materials, policies and guidelines</p> <p>8.2 Specific drug nutrient interactions with nutrition</p>

	implications are identified and described as per resource materials, policies and guidelines
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## RANGE

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

Variable	Range
	May include but not limited to:
1. Type of feeding may include but are not limited to:	<ul style="list-style-type: none"> <li>• Normal</li> <li>• Modified kitchen feeds</li> <li>• Enteral feeds</li> <li>• Parenteral feeds</li> </ul>
2. Implications may include but are not limited to:	<ul style="list-style-type: none"> <li>• Acute</li> <li>• Chronic</li> </ul>

## REQUIRED KNOWLEDGE AND UNDERSTANDING

The individual needs to demonstrate knowledge of:

### Knowledge

- Nutrition and disease
- Anatomy and physiology
- WHO guidelines
- MOH guidelines
- Macro and micro nutrients
- Biochemical analysis

### Skills

The individual needs to demonstrate the following skills:

- ICT
- Communication
- Information technology
- Analysis
- Synthesis and evaluation
- Decision making

- Management
- Leadership

## 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: Demonstrates; 1. 1Ability to carry out client nutritional assessment 1. 2Ability to identify client’s condition 1. 3Ability to design phases of the care process 1. 4Ability to determine special dietary needs 1. 5Ability to determine types of feeding 1. 6Ability to carry out nutritional risk assessment
2 Resource Implications	The following resources must be provided: 2.1 Skills lab 2.2 Library 2.3 Fully equipped kitchen 2.4 Food lab
3 Methods of Assessment	Competency may be accessed through: 3.1 Written tests 3.2 Oral questioning 3.3 Third party reports 3.4 Case studies
4 Context of Assessment	Competency may be assessed: 4.1 On the job 4.2 Off the job 4.3 In work placement (attachment) Off the job assessment must be undertaken in a closely simulated workplace environment
5 Guidance information for assessment	Holistic assessment with other units relevant to the industry subsector, workplace and job roles is recommended.

## CONDUCT NUTRITION ASSESSMENT AND SURVEILLANCE

**UNIT CODE:** MED/OS/NUD/CR/7/5/A

### UNIT DESCRIPTION

This unit specifies the competencies required to conduct nutrition assessment and surveillance. It involves conducting anthropometric assessment, interpreting biochemical assessment result, conducting clinical examination and dietary surveys and conducting nutrition surveillance.

### ELEMENTS AND PERFORMANCE CRITERIA

<b>ELEMENT</b> These describe the <b>key outcomes</b> which make up <b>workplace function</b> .	<b>PERFORMANCE CRITERIA</b> These are <b>assessable</b> statements which specify the required level of performance for each of the elements. <i><b>Bold and italicized terms are elaborated in the range.</b></i>
1. Conduct anthropometric assessment	1. 1Anthropometric measurements are determined as per user needs 1. 2Anthropometric method is determined as per user needs 1. 3Anthropometric tools are identified as per anthropometric measurement 1. 4Anthropometric measurements are evaluated as per anthropometric results
2. Interpret biochemical assessment result	2.1 Laboratory results are interpreted as per reference interval 2.2 Laboratory result are evaluated as per biological variation knowledge 2.3 Influence of errors is determined 2.4 Diagnostic sensitivity and specify are identified
3. Conduct clinical examination	3.1 Patient medical history is obtained as per organizational procedures 3.2 Systems are reviewed as per physical examination 3.3 Physical examination is conducted as per client needs 3.4 Risk assessment is carried out as per medical procedures.
4. Conduct dietary surveys	4.1 <i><b>Dietary method</b></i> is determined as per work place policy 4.2 Dietary recall questionnaire is conducted as per client nutrition requirements 4.3 Food frequency questionnaire are conducted as per nutritional requirement

	4.4 Diet history is obtained as per clients' records
5. Conduct nutrition surveillance	5.1 Method of nutrition surveillance is determined 5.2 Surveillance information is obtained 5.3 Type of nutrition survey is determined

### **RANGE**

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

<b>Variable</b>	<b>Range</b>
	May include but not limited to:
1 Dietary method may include but are not limited to:	1.1 24-hour food recall 1.2 Food frequency questionnaire (FFQ) 1.3 Food diary

### **REQUIRED KNOWLEDGE AND UNDERSTANDING**

The individual needs to demonstrate knowledge of:

#### **Knowledge**

- Surveillance
- Research
- Topography

#### **Skills**

The individual needs to demonstrate the following skills:

- ICT
- Communication
- Information technology
- Analysis
- Synthesis and evaluation
- Decision making
- Management
- Leadership

## 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: Demonstrates; 1. 1Ability to conduct anthropometric assessment 1. 2Ability to conduct interpret biochemical assessment result 1. 3Ability to conduct clinical examination 1. 4Ability to conduct dietary surveys 1. 5Ability to conduct nutrition surveillance
2. Resource Implications	The following resources must be provided: 2.1 Skills lab 2.2 Anthropometric tools
3. Methods of Assessment	Competency may be accessed through: 3.1 Written tests 3.2 Oral questioning 3.3 Third party reports 3.4 Case studies
4. Context of Assessment	Competency may be assessed: 4.1 On the job 4.2 Off the job 4.3 In work placement (attachment) Off the job assessment must be undertaken in a closely simulated workplace environment
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry subsector, workplace and job roles is recommended.