



REPUBLIC OF KENYA

COMPETENCY BASED CURRICULUM

FOR

HUMAN NUTRITION AND DIETETICS

LEVEL 6



TVET CDACC
P.O. BOX 15745-00100
NAIROBI

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FOREWORD

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

Reforms in the education sector are necessary for the achievement of Kenya Vision 2030 and meeting the provisions of the Constitution of Kenya 2010. The education sector had to be aligned to the Constitution and this resulted to the formulation of the Policy Framework for Reforming Education and Training (Sessional Paper No. 4 of 2016). A key feature of this policy is the radical change in the design and delivery of 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 this curriculum has been developed.

It is my conviction that this curriculum will play a great role towards development of competent human resource for the Nutrition and dietetics 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 and Sessional Paper No. 4 of 2016 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 labour force.

TVET Curriculum Development, Assessment and Certification Council (TVET CDACC) in conjunction with Nutrition and dietetics Sector Skills Advisory Committee (SSAC) have developed this curriculum.

This curriculum has been developed following the CBET framework policy; the CBETA Standards and guidelines provided by the TVET Authority and the Kenya National Qualification framework designed by the Kenya National Qualification Authority.

This curriculum is designed and organized with an outline of learning outcomes; suggested delivery methods, training/learning resources and methods of assessing the trainee’s achievement. The curriculum is competency-based and allows multiple entry and exit to the course.

I am grateful to the Council Members, Council Secretariat, Nutrition and dietetics SSAC, expert workers and all those who participated in the development of this curriculum.

**Prof. CHARLES M. M. ONDIEKI, PhD, FIET (K), Con. EngTech.
CHAIRMAN, TVET CDACC**

ACKNOWLEDGMENT

This curriculum has been designed for competency-based training and has independent units of learning that allow the trainee flexibility in entry and exit. In developing the curriculum, significant involvement and support was received from various organizations.

I recognize with appreciation the role of the Nutrition and dietetics Sector Skills Advisory Committee (SSAC) in ensuring that competencies required by the industry are addressed in the curriculum. I also thank all stakeholders in the Nutrition and dietetics sector for their valuable input and all those who participated in the process of developing this curriculum.

I am convinced that this curriculum will go a long way in ensuring that workers in Nutrition and dietetics Sector acquire competencies that will enable them to perform their work more efficiently.

Dr. LAWRENCE GUANTAI M'ITONGA, PhD
COUNCIL SECRETARY/CEO

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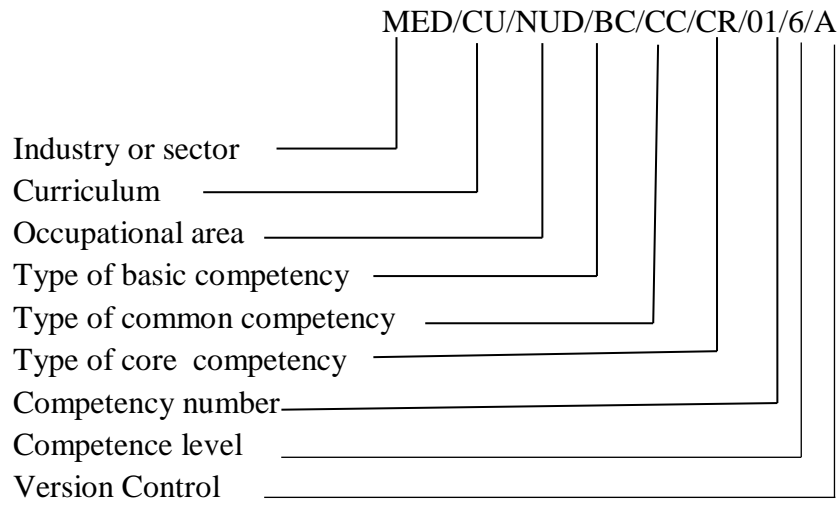
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ACRONYMS

CDACC	: Curriculum Development Assessment and Certification Council
CU	: Curriculum
BC	: Basic Competency
BFHI	: Baby Friendly Hospital Initiative
BFCI	: Baby Friendly Community Initiative
BMS	: Breast Milk Substitute
CC	: Core Competency
CO	: Common Units
IMAM	: Intergrated Management of Acute Malnutrition
IYCN	: Infant and Young Child Nutrition
KCSE	: Kenya Certificate of Secondary Education
KNQA	: Kenya National Qualifications Authority
MIYCN	: Maternal Infant and Young Child Nutrition
OSHA	: Occupation Safety and Health Act
PPE	: Personal Protective Equipment
SSAC	: Sector Skills Advisory Committee
TVET	: Technical and Vocational Education and Training
NUD	: Nutrition and dietetics
MED	: Medical

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KEY TO UNIT CODE



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COURSE OVERVIEW

The Nutrition and dietetics level six (6) qualification consists of competencies that a person must achieve to apply nutrition in emergency, apply principles of human nutrition, examine client nutritional status, diagnose client nutritional requirement, develop nutrition care plan, plan and manage meals, manage maternal and child nutrition, conduct nutrition education and counselling, provide diet therapy, conduct nutrition assessment and surveillance within the institution's/organizations acceptable standard operating procedures.

Units of Learning

This course consists of basic and core units of learning as indicated below:

Basic Units of Learning

Unit of Learning Code	Unit of Learning Title	Duration in Hours	Credit Factor
MED/CU/NUD/BC/01/6/A	Communication skills	40	4
MED/CU/NUD/BC/02/6/A	Occupational safety and health practices	40	4
MED/CU/NUD/BC/03/6/A	Numeracy skills	60	6
MED/CU/NUD/BC/04/6/A	Digital literacy	60	6
MED/CU/NUD/BC/05/6/A	Entrepreneurial skills	100	10
MED/CU/NUD/BC/06/6/A	Employability skills	80	8
MED/CU/NUD/BC/07/6/A	Environmental literacy	40	4
Total		420	42

Common units of learning

Unit of Learning Code	Unit of Learning Title	Duration in Hours	Credit Factor
MED/CU/NUD/CC/01/6/A	Human anatomy	80	8
MED/CU/NUD/CC/02/6/A	Medical physiology	70	7
MED/CU/NUD/CC/03/6/A	Microbiology	90	9
MED/CU/NUD/CC/04/6/A	Food processing, safety and hygiene	50	5
MED/CU/NUD/CC/05/6/A	Nutrition biochemistry	60	6
MED/CU/NUD/CC/06/6/A	Research methods and statistics	30	3
Total		380	38

Core units of learning

Unit of Learning Code	Unit of Learning Title	Duration in Hours	Credit Factor
MED/CU/NUD/CR/01/6/A	Nutrition in emergency	80	8
MED/CU/NUD/CR/02/6/A	Nutrition in life cycle	160	16
MED/CU/NUD/CR/03/6/A	Principles of human nutrition	200	20
MED/CU/NUD/CR/04/6/A	Nutrition care process	80	8
MED/CU/NUD/CR/05/6/A	Meal planning and management	90	9
MED/CU/NUD/CR/06/6/A	Maternal, infant and child nutrition	220	22
MED/CU/NUD/CR/07/6/A	Nutrition education and counselling	70	7
MED/CU/NUD/CR/08/6/A	Diet therapy I	80	8
MED/CU/NUD/CR/09/6/A	Diet therapy II	80	
MED/CU/NUD/CR/10/6/A	Dietetics	210	21
MED/CU/NUD/CR/11/6/A	Nutrition assessment and surveillance	70	7
	Industrial attachment	480	48
Total		1820	182
Grand total		2620	262

The total duration of the course is **2620** hours.

Entry Requirements

An individual entering this course should have any of the following minimum requirements:

- a) Nutrition and dietetics Craft Certificate Level 5

Or

- b) Kenya Certificate of Secondary Education (KCSE) Mean Grade C- (Minus)

Or

- c) Equivalent qualifications as determined by Kenya National Qualifications Authority (KNQA)

Assessment

The course will be assessed at two levels: internally and externally. Internal assessment is continuous and is conducted by the trainer who is monitored by an accredited internal verifier while external assessment is the responsibility of TVET CDACC.

Certification

A candidate will be issued with a Record of Achievement for each Unit of Competency. To attain the qualification National Diploma Level 6 Human nutrition and dietetics, the candidate must demonstrate competence in all the units of competency as given in qualification pack. These certificates will be issued by TVET CDACC in conjunction with training provider

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BASIC UNITS OF LEARNING

COMMUNICATION SKILLS

UNIT CODE: MED/CU/NUD/BC/01/6/A

Relationship to Occupational Standards

This unit addresses the Unit of Competency: Demonstrate Communication Skills

Duration of Unit: 40 hours

Unit Description

This unit covers the competencies required to demonstrate communication skills .It involves, meeting communication needs of clients and colleagues; developing communication strategies, establishing and maintaining communication pathways, conducting interviews, facilitating group discussion and representing the organization.

Summary of Learning Outcomes

1. Meet communication needs of clients and colleagues
2. Develop communication strategies
3. Establish and maintain communication pathways
4. Promote use of communication strategies
5. Conduct interview
6. Facilitate group discussion
7. Represent the organization

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Meet communication needs of clients and colleagues	<ul style="list-style-type: none">• Communication process• Modes of communication• Medium of communication• Effective communication• Barriers to communication• Flow of communication• Sources of information• Organizational policies• Organization requirements for written and electronic communication methods• Report writing• Effective questioning techniques (clarifying and probing)	<ul style="list-style-type: none">• Interview• Written texts

	<ul style="list-style-type: none"> • Workplace etiquette • Ethical work practices in handling communication • Active listening • Feedback • Interpretation • Flexibility in communication • Types of communication strategies • Elements of communication strategy 	
2. Develop communication strategies	<ul style="list-style-type: none"> • Dynamics of groups • Styles of group leadership • Openness and flexibility in communication • Communication skills relevant to client groups 	<ul style="list-style-type: none"> • Interview • Written texts
3. Establish and maintain communication pathways	<ul style="list-style-type: none"> • Types of communication pathways 	<ul style="list-style-type: none"> • Interview • Written texts
4. Promote use of communication strategies	<ul style="list-style-type: none"> • Application of elements of communication strategies • Effective communication techniques 	<ul style="list-style-type: none"> • Interview • Written texts
5. Conduct interview	<ul style="list-style-type: none"> • Types of interview • Establishing rapport • Facilitating resolution of issues • Developing action plans 	<ul style="list-style-type: none"> • Interview • Written texts
6. Facilitate group discussion	<ul style="list-style-type: none"> • Identification of communication needs • Dynamics of groups • Styles of group leadership • Presentation of information • Encouraging group members participation • Evaluating group communication strategies 	<ul style="list-style-type: none"> • Interview • Written texts

7. Represent the organization	<ul style="list-style-type: none"> • Presentation techniques • Development of a presentation • Multi-media utilization in presentation • Communication skills relevant to client groups 	<ul style="list-style-type: none"> • Interview • Written texts
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Suggested Methods of Instruction

- Discussion
- Role playing
- Simulation
- Direct instruction

Recommended Resources

- Desktop computers/laptops
- Internet connection
- Projectors
- Telephone

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NUMERACY SKILLS

UNIT CODE: MED/CU/NUD/BC/02/6/A

Relationship to Occupational Standards

This unit addresses the Unit of Competency: Demonstrate Numeracy Skills.

Duration of Unit: 60 hours

Unit Description

This unit describes the competencies required to demonstrate numeracy skills. It involves applying a wide range of mathematical calculations for work; applying ratios, rates and proportions to solve problems; estimating, measuring and calculating measurement for work; using detailed maps to plan travel routes for work; using geometry to draw and construct 2D and 3D shapes for work; collecting, organizing and interpreting statistical data; using routine formula and algebraic expressions for work and using common functions of a scientific calculator.

Summary of Learning Outcomes

1. Apply a wide range of mathematical calculations for work
2. Apply ratios, rates and proportions to solve problems
3. Estimate, measure and calculate measurement for work
4. Use detailed maps to plan travel routes for work
5. Use geometry to draw and construct 2D and 3D shapes for work
6. Collect, organize and interpret statistical data
7. Use routine formula and algebraic expressions for work
8. Use common functions of a scientific calculator

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Apply a wide range of mathematical calculations for work	<ul style="list-style-type: none">• Fundamentals of mathematics• Addition, subtraction, multiplication and division of positive and negative numbers• Algebraic expressions manipulation• Forms of fractions, decimals and percentages• Expression of numbers as powers and roots	<ul style="list-style-type: none">• Written tests• Assignments• Supervised exercises
2. Apply ratios, rates and	<ul style="list-style-type: none">• Rates, ratios and proportions<ul style="list-style-type: none">➤ Meaning	<ul style="list-style-type: none">• Written tests

<p>proportions to solve problems</p>	<ul style="list-style-type: none"> ➤ Conversions into percentages ➤ Direct and inverse proportions determination ➤ Performing calculations ➤ Construction of graphs, charts and tables ➤ Recording of information 	<ul style="list-style-type: none"> • Assignments • Supervised exercises
<p>3. Estimate, measure and calculate measurement for work</p>	<ul style="list-style-type: none"> • Units of measurements and their symbols • Identification and selection of measuring equipment • Conversion of units of measurement • Perimeters of regular figures • Areas of regular figures • Volumes of regular figures • Carrying out measurements • Recording of information 	<ul style="list-style-type: none"> • Assignments • Supervised exercises • Written tests
<p>4. Use detailed maps to plan travel routes for work</p>	<ul style="list-style-type: none"> • Identification of features in routine maps and plans • Symbols and keys used in routine maps and plans • Identification and interpretation of orientation of map to North • Demonstrate understanding of direction and location • Apply simple scale to estimate length of objects, or distance to location or object • Give and receive directions using both formal and informal language • Planning of routes • Calculation of distance, speed and time 	<ul style="list-style-type: none"> • Written • Practical test

<p>5. Use geometry to draw and construct 2D and 3D shapes for work</p>	<ul style="list-style-type: none"> • Identify two dimensional shapes and routine three dimensional shapes in everyday objects and in different orientations • Explain the use and application of shapes • Use formal and informal mathematical language and symbols to describe and compare the features of two dimensional shapes and routine three dimensional shapes • Identify common angles • Estimate common angles in everyday objects • Evaluation of unknown angles • Use formal and informal mathematical language to describe and compare common angles • Symmetry and similarity • Use common geometric instruments to draw two dimensional shapes • Construct routine three dimensional objects from given nets 	
<p>6. Collect, organize and interpret statistical data</p>	<ul style="list-style-type: none"> • Classification of data <ul style="list-style-type: none"> • Grouped data • Ungrouped data • Data collection <ul style="list-style-type: none"> • Observation • Recording • Distinguishing between sampling and census • Importance of sampling • Errors in sampling • Types of sampling and their limitations e.g. 	<ul style="list-style-type: none"> • Assignments • Supervised exercises • Written tests

	<ul style="list-style-type: none"> • Stratified random • Cluster • Judgmental • Tabulation of data <ul style="list-style-type: none"> • Class intervals • Class boundaries • Frequency tables • Cumulative frequency • Diagrammatic and graphical presentation of data e.g. <ul style="list-style-type: none"> • Histograms • Frequency polygons • Bar charts • Pie charts • Cumulative frequency curves <p><input type="checkbox"/> Interpretation of data</p>	
7. Use routine formula and algebraic expressions for work	<ul style="list-style-type: none"> • Solving linear equations • Linear graphs <ul style="list-style-type: none"> • Plotting • Interpretation • Applications of linear graphs • Curves of first and second degree <ul style="list-style-type: none"> • Plotting • Interpretation 	<ul style="list-style-type: none"> • Assignments • Supervised exercises • Written tests
8. Use common functions of a scientific calculator	<ul style="list-style-type: none"> • Identify and use keys for common functions on a calculator • Calculate using whole numbers, money and routine decimals and percentages • Calculate with routine fractions and percentages • Apply order of operations to solve multi-step calculations • Interpret display and record result 	<ul style="list-style-type: none"> • • Written • Practical test

Suggested Methods of Instruction

- Group discussions
- Demonstration by trainer
- Practical work by trainee
- Exercises

Recommended Resources

- Calculators
- Rulers, pencils, erasers
- Charts with presentations of data
- Graph books
- Dice

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DIGITAL LITERACY

UNIT CODE:MED/CU/NUD/BC/03/6/A

Relationship to Occupational Standards

This unit addresses the Unit of Competency: Demonstrate Digital Literacy

Duration of Unit: 60 hours

Unit Description

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

Summary of Learning Outcomes

1. Identify computer software and hardware
2. Apply security measures to data, hardware, software in automated environment
3. Apply computer software in solving tasks
4. Apply internet and email in communication at workplace
5. Apply desktop publishing in official assignments
6. Prepare presentation packages

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Identify computer hardware and software	<ul style="list-style-type: none">• Concepts of ICT• Functions of ICT• History of computers• Components of a computer• Classification of computers	<ul style="list-style-type: none">• Written tests• Oral presentation
2. Apply security measures to data, hardware, software in automated environment	<ul style="list-style-type: none">• Data security and control• Security threats and control measures• Types of computer crimes• Detection and protection against computer crimes	<ul style="list-style-type: none">• Written tests• Oral presentation• Project

	<ul style="list-style-type: none"> • Laws governing protection of ICT 	
3. Apply computer software in solving tasks	<ul style="list-style-type: none"> • Operating system • Word processing • Spread sheets • Data base design and manipulation • Data manipulation, storage and retrieval 	<ul style="list-style-type: none"> • Oral questioning • Project
4. Apply internet and email in communication at workplace	<ul style="list-style-type: none"> • Computer networks • Network configurations • Uses of internet • Electronic mail (e-mail) concept 	<ul style="list-style-type: none"> • Oral questioning • Written report
5. Apply desktop publishing in official assignments	<ul style="list-style-type: none"> • Concept of desktop publishing • Opening publication window • Identifying different tools and tool bars • Determining page layout • Opening, saving and closing files • Drawing various shapes using DTP • Using colour pellets to enhance a document • Inserting text frames • Importing and exporting text • Object linking and embedding • Designing of various publications • Printing of various publications 	<ul style="list-style-type: none"> • Oral questioning • Written report • Project
6. Prepare presentation packages	<ul style="list-style-type: none"> • Types of presentation packages • Procedure of creating slides • Formatting slides 	<ul style="list-style-type: none"> • Oral questioning • Written report • Project

	<ul style="list-style-type: none">• Presentation of slides• Procedure for editing objects	
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Suggested Methods of Instruction

- Instructor led facilitation of theory
- Demonstration by trainer
- Practical work by trainee
- Viewing of related videos
- Project
- Group discussions

Recommended Resources

- Computers
- Printers
- Storage devices
- Internet access

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ENTREPRENEURIAL SKILLS

UNIT CODE: MED/CU/NUD/BC/04/6/A

Relationship to Occupational Standards

This unit addresses the Unit of Competency: Demonstrate Entrepreneurial Skills

Duration of unit: 100 hours

Unit Description

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

Summary of Learning Outcomes

1. Demonstrate understanding of who an entrepreneur
2. Demonstrate knowledge of entrepreneurship and self-employment
3. Identify entrepreneurship opportunities
4. Create entrepreneurial awareness
5. Apply entrepreneurial motivation
6. Develop business innovative strategies
7. Develop Business plan

Learning Outcome	Content	Suggested Assessment Methods
1. Demonstrate knowledge of entrepreneurship and self-employment	<ul style="list-style-type: none">• Importance of self-employment• Requirements for entry into self-employment• Role of an Entrepreneur in business• Contributions of Entrepreneurs to National development• Entrepreneurship culture in Kenya• Born or made entrepreneurs	<ul style="list-style-type: none">• Individual/group assignments• Projects• Written tests• Oral questions• Third party report

<p>2. Identify entrepreneurship opportunities</p>	<ul style="list-style-type: none"> • Business ideas and opportunities • Sources of business ideas • Business life cycle • Legal aspects of business • Assessment of product demand • Business environment • Factors to consider when evaluating business environment • Technology in business 	<ul style="list-style-type: none"> • Individual/group assignments • Projects • Written tests • Oral questions • Third party report • Interviews
<p>3. Create entrepreneurial awareness</p>	<ul style="list-style-type: none"> • Forms of businesses • Sources of business finance • Factors in selecting source of business finance • Governing policies on Small Scale Enterprises (SSEs) • Problems of starting and operating SSEs 	<ul style="list-style-type: none"> • Individual/group assignments • Projects • Written tests • Oral questions • Third party report • Interviews
<p>4. Apply entrepreneurial motivation</p>	<ul style="list-style-type: none"> • Internal and external motivation • Motivational theories • Self-assessment • Entrepreneurial orientation • Effective communications in entrepreneurship • Principles of communication • Entrepreneurial motivation 	<ul style="list-style-type: none"> • Case studies • Individual/group assignments • Projects • Written tests • Oral questions • Third party report • Interviews
<p>5. Develop business innovative strategies</p>	<ul style="list-style-type: none"> • Innovation in business • Small business Strategic Plan • Creativity in business development • Linkages with other entrepreneurs • ICT in business growth and development 	<ul style="list-style-type: none"> • Case studies • Individual/group assignments • Projects • Written tests • Oral questions • Third party report • Interviews

1. Develop Business Plan	<ul style="list-style-type: none"> • Business description • Marketing plan • Organizational/Management plan • Production/operation plan • Financial plan • Executive summary • Presentation of Business Plan 	<ul style="list-style-type: none"> • Case studies • Individual/group assignments • Projects • Written tests • Oral questions • Third party report • Interviews
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Suggested Methods of Instruction

- Direct instruction
- Project
- Case studies
- Field trips
- Discussions
- Demonstration
- Question and answer
- Problem solving
- Experiential
- Team training

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Recommended Resources

- Case studies
- Business plan templates
- Computers
- Overhead projectors
- Internet
- Mobile phone
- Video clips
- Films
- Newspapers and Handouts
- Business Journals
- Writing materials

EMPLOYABILITY SKILLS

UNIT CODE: MED/CU/NUD/BC/05/6/A

Relationship to Occupational Standards

This unit addresses the Unit of Competency: Demonstrate Employability Skills

Duration of Unit: 80 hours

Unit Description

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

Summary of Learning Outcomes

1. Conduct self-management
2. Demonstrate interpersonal communication
3. Demonstrate critical safe work habits
4. Lead a workplace team
5. Plan and organize work
6. Maintain professional growth and development
7. Demonstrate workplace learning
8. Demonstrate problem solving skills
9. Manage ethical performance

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Conduct self-management	<ul style="list-style-type: none">• Self-awareness• Formulating personal vision, mission and goals• Strategies for overcoming life challenges• Managing emotions• Emotional intelligence• Assertiveness versus aggressiveness• Expressing personal thoughts, feelings and beliefs	<ul style="list-style-type: none">• Written tests• Oral questioning• Interviewing• Portfolio of evidence• Third party report

	<ul style="list-style-type: none"> • Developing and maintaining high self-esteem • Developing and maintaining positive self-image • Setting performance targets • Monitoring and evaluating performance • Articulating ideas and aspirations • Accountability and responsibility • Good work habits • Self-awareness • Values and beliefs • Self-development • Financial literacy • Healthy lifestyle practices • Adopting safety practices 	
2. Demonstrate interpersonal communication	<ul style="list-style-type: none"> • Meaning of interpersonal communication • Listening skills • Types of audience • Public speaking • Writing skills • Negotiation skills • Reading skills • Meaning of empathy • Understanding customers' needs • Establishing communication networks • Assertiveness • Sharing information 	<ul style="list-style-type: none"> • Written tests • Oral questioning • Interviewing • Portfolio of evidence • Third party report
3. Demonstrate critical safe work habits	<ul style="list-style-type: none"> • Stress and stress management • Time concept • Punctuality and time consciousness • Leisure 	<ul style="list-style-type: none"> • Written tests • Oral questioning • Interviewing • Portfolio of evidence • Third party report

	<ul style="list-style-type: none"> • Integrating personal objectives into organizational objectives • Resources mobilization • Resources utilization • Setting work priorities • Developing healthy relationships • HIV and AIDS • Drug and substance abuse • Managing emerging issues 	
4. Lead a workplace team	<ul style="list-style-type: none"> • Leadership qualities • Power and authority • Team building • Determination of team roles and objectives • Team parameters and relationships • Individual responsibilities in a team • Forms of communication • Complementing team activities • Gender and gender mainstreaming • Human rights • Developing healthy relationships • Maintaining relationships • Conflicts and conflict resolution • Coaching and mentoring skills 	<ul style="list-style-type: none"> • Written tests • Oral questioning • Interviewing • Portfolio of evidence • Third party report
5. Plan and organize work	<ul style="list-style-type: none"> • Functions of management • Planning • Organizing • Time management • Decision making concept • Task allocation • Developing work plans 	<ul style="list-style-type: none"> • Written tests • Oral questioning • Interviewing • Portfolio of evidence • Third party report

	<ul style="list-style-type: none"> • Developing work goals/objectives and deliverables • Monitoring work activities • Evaluating work activities • Resource mobilization • Resource allocation • Resource utilization • Proactive planning • Risk evaluation • Problem solving • Collecting, analysing and organising information • Negotiation 	
6. Maintain professional growth and development	<ul style="list-style-type: none"> • Avenues for professional growth • Training and career opportunities • Assessing training needs • Mobilizing training resources • Licenses and certifications for professional growth and development • Pursuing personal and organizational goals • Managing work priorities and commitments • Recognizing career advancement 	<ul style="list-style-type: none"> • Written tests • Oral questioning • Interviewing • Portfolio of evidence • Third party report
7. Demonstrate workplace learning	<ul style="list-style-type: none"> • Managing own learning • Mentoring • Coaching • Contributing to the learning community at the workplace • Cultural aspects of work • Networking • Variety of learning context • Application of learning • Safe use of technology 	<ul style="list-style-type: none"> • Written tests • Oral questioning • Interviewing • Portfolio of evidence • Third party report

	<ul style="list-style-type: none"> • Taking initiative/proactivity • Flexibility • Identifying opportunities • Generating new ideas • Workplace innovation • Performance improvement • Managing emerging issues • Future trends and concerns in learning 	
8. Demonstrate problem solving skills	<ul style="list-style-type: none"> • Critical thinking process • Data analysis tools • Decision making • Creative thinking • Development of creative, innovative and practical solutions • Independence in identifying and solving problems • Solving problems in teams • Application of problem-solving strategies • Testing assumptions • Resolving customer concerns 	<ul style="list-style-type: none"> • Written tests • Oral questioning • Interviewing • Portfolio of evidence • Third party report
9. Manage ethical performance	<ul style="list-style-type: none"> • Meaning of ethics • Ethical perspectives • Principles of ethics • Ethical standards • Organization code of ethics • Common ethical dilemmas • Organization culture • Corruption, bribery and conflict of interest • Privacy and data protection • Diversity, harassment and mutual respect • Financial responsibility/accountability • Etiquette • Personal and professional integrity 	<ul style="list-style-type: none"> • Written tests • Oral questioning • Interviewing • Portfolio of evidence • Third party report

	<ul style="list-style-type: none">• Commitment to jurisdictional laws• Emerging issues in ethics	
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Suggested Methods of Instruction

- Demonstrations
- Simulation/Role play
- Group Discussion
- Presentations
- Assignments
- Q&A

Recommended Resources

- Computers
- Stationery
- Charts
- Video clips
- Audio tapes
- Radio sets
- TV sets
- LCD projectors

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ENVIRONMENTAL LITERACY

UNIT CODE: MED/CU/NUD/BC/06/6/A

Relationship to Occupational Standards:

This unit addresses the Unit of Competency : Demonstrate Environmental Literacy

Duration of Unit: 40 hours

Unit Description

This unit describes the competencies required demonstrate environmental literacy.it involves controlling environmental hazard, controlling 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, monitoring activities on environmental protection/programs, analysing resource use and developing resource conservation plans.

Summary of Learning Outcomes

1. Control environmental hazard
2. Control environmental Pollution
3. Demonstrate sustainable resource use
4. Evaluate current practices in relation to resource usage
5. Identify Environmental legislations/conventions for environmental concerns
6. Implement specific environmental programs
7. Monitor activities on Environmental protection/Programs
8. Analyze resource use
9. Develop resource conservation plans

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Control environmental hazard	<ul style="list-style-type: none">• Purposes and content of Environmental Management and Coordination Act 1999• Storage methods for environmentally hazardous materials• Disposal methods of hazardous wastes	<ul style="list-style-type: none">• Written questions• Oral questions

	<ul style="list-style-type: none"> • Types and uses of PPE in line with environmental regulations • Occupational Safety and Health Standards (OSHS) 	
2. Control environmental Pollution control	<ul style="list-style-type: none"> • Types of pollution • Environmental pollution control measures • Types of solid wastes • Procedures for solid waste management • Different types of noise pollution • Methods for minimizing noise pollution 	<ul style="list-style-type: none"> • Written questions • Oral questions • Role play
3. Demonstrate sustainable resource use	<ul style="list-style-type: none"> • Types of resources • Techniques in measuring current usage of resources • Calculating current usage of resources • Methods for minimizing wastage • Waste management procedures • Principles of 3Rs (Reduce, Reuse, Recycle) • Methods for economizing or reducing resource consumption 	<ul style="list-style-type: none"> • Written questions • Oral questions • Role play
4. Evaluate current practices in relation to resource usage	<ul style="list-style-type: none"> • Collection of information on environmental and resource efficiency systems and procedures, • Measurement and recording of current resource usage • Analysis and recording of current purchasing strategies. • Analysis of current work processes to access information and data 	<ul style="list-style-type: none"> • Written questions • Oral questions • Role play

	<ul style="list-style-type: none"> • Identification of areas for improvement 	
5. Identify Environmental legislations/conventions for environmental concerns	<ul style="list-style-type: none"> • Environmental issues/concerns • Environmental legislations /conventions and local ordinances • Industrial standard /environmental practices • International Environmental Protocols (Montreal, Kyoto) • Features of an environmental strategy 	<ul style="list-style-type: none"> • Written questions • Oral questions
6. Implement specific environmental programs	<ul style="list-style-type: none"> • Community needs and expectations • Resource availability • 5s of good housekeeping • Identification of programs/Activities • Setting of individual roles /responsibilities • Resolving problems /constraints encountered • Consultation with stakeholders 	<ul style="list-style-type: none"> • Written questions • Oral questions • Role play
7. Monitor activities on Environmental protection/Programs	<ul style="list-style-type: none"> • Periodic monitoring and Evaluation of activities • Gathering feedback from stakeholders • Analyzing data gathered • Documentation of recommendations and submission • Setting of management support systems to sustain and enhance the program • Monitoring and reporting of environmental incidents 	<ul style="list-style-type: none"> • Oral questions • Written tests • Practical test

	to concerned /proper authorities	
8. Analyze resource use	<ul style="list-style-type: none"> • Identification of resource consuming processes • Determination of quantity and nature of resource consumed • Analysis of resource flow through different parts of the process. • Classification of wastes for possible source of resources. 	<ul style="list-style-type: none"> • Written tests • Oral questions • Practical test
9. Develop resource Conservation plans	<ul style="list-style-type: none"> • Determination of efficiency of use/conversion of resources • Causes of low efficiency of use of resources • Plans for increasing the efficiency of resource use 	<ul style="list-style-type: none"> • Written tests • Oral questions • Practical test

Suggested Methods of Instruction

- Instructor led facilitation of theory
- Practical demonstration of tasks by trainer
- Practice by trainees
- Observations and comments and corrections by trainers

Recommended Resources

- Standard operating and/or other workplace procedures manuals
- Specific job procedures manuals
- Environmental Management and Coordination Act 1999
- Machine/equipment manufacturer's specifications and instructions
- Personal Protective Equipment (PPE)
- ISO standards
- Company environmental management systems (EMS)
- Montreal Protocol
- Kyoto Protocol

OCCUPATIONAL SAFETY AND HEALTH PRACTICES

UNIT CODE: MED/CU/NUD/BC/07/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: Demonstrate Occupational Safety and Health Practices

Duration of Unit: 40 hours

Unit Description

This unit specifies the competencies required to demonstrate occupational health and safety practices. It involves identifying workplace hazards and risk, identifying and implementing appropriate control measures to hazards and risks and implementing OSH programs, procedures and policies/guidelines.

Summary of Learning Outcomes

1. Identify workplace hazards and risk
2. Control OSH hazards
3. Implement OSH programs

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Identify workplace hazards and risks	<ul style="list-style-type: none">• Identification of hazards in the workplace and/or the indicators of their presence• Evaluation and/or work environment measurements of OSH hazards/risk existing in the workplace• Gathering of OSH issues and/or concerns	<ul style="list-style-type: none">• Oral questions• Written tests• Portfolio of evidence• Third party report
2. Control OSH hazards	<ul style="list-style-type: none">• Prevention and control measures e.g. use of PPE• Risk assessment• Contingency measures	<ul style="list-style-type: none">• Oral questions• Written tests• Portfolio of evidence• Third party report

<p>3. Implement OSH programs</p>	<ul style="list-style-type: none"> • Company OSH program, evaluation and review • Implementation of OSH programs • Training of team members and advice on OSH standards and procedures • Implementation of procedures for maintaining OSH-related records 	<ul style="list-style-type: none"> • Oral questions • Written tests • Portfolio of evidence • Third party report
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Suggested Methods of instruction

- Assignments
- Discussion
- Q&A
- Role play
- Viewing of related videos

Recommended Resources

- Standard operating and/or other workplace procedures manuals
- Specific job procedures manuals
- Machine/equipment manufacturer's specifications and instructions
- Personal Protective Equipment (PPE) e.g.
 - Mask
 - Face mask/shield
 - Safety boots
 - Safety harness
 - Arm/Hand guard, gloves
 - Eye protection (goggles, shield)
 - Hearing protection (ear muffs, ear plugs)
 - Hair Net/cap/bonnet
 - Hard hat
 - Face protection (mask, shield)
 - Apron/Gown/coverall/jump suit
 - Anti-static suits
 - High-visibility reflective vest

COMMON UNITS OF COMPETENCY

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HUMAN ANATOMY

UNIT CODE: MED/CU/NUD/CC/01/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: demonstrate knowledge of human anatomy

Duration of Unit: 80 hours

UNIT DESCRIPTION

This unit specifies the competencies required to establish human anatomy. It involves analyzing the scope of anatomy, identifying anatomical terminologies, demonstrating the knowledge of cell and cell division, identifying histological and cytological methods and demonstrating knowledge of types of tissues and their location.

Summary of Learning Outcomes

- 1 Identify anatomical terminologies
- 2 Demonstrate the knowledge of cell and cell division
- 3 Identify histological and cytological methods
- 4 Demonstrate knowledge of types of tissues and their location

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Identify anatomical terminologies	<ul style="list-style-type: none">• Meaning of human anatomy• Relevant anatomical and physiological terminology• Application of relevant anatomical and physiological terminology	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews
2. Demonstrate the knowledge of cell and cell division	<ul style="list-style-type: none">• Types of cells• The cell structure• Process of cell division• Components of a human cell• The composition of cytoplasm• Roles and functions of cell components	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews
3. Identify histological and	<ul style="list-style-type: none">• Direct observation process• Histochemical methods	<ul style="list-style-type: none">• Written .• Observation

Learning Outcome	Content	Suggested Assessment Methods
cytological methods	<ul style="list-style-type: none"> • Chemical methods • Physical methods • Staining methods • Immunohistochemical methods • X-ray diffraction 	<ul style="list-style-type: none"> • Third party report • Oral questioning • Interviews
4. Demonstrate knowledge of types of tissues and their location	<ul style="list-style-type: none"> • Types of tissues • Location of tissues • The process of organogenesis 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction

Recommended Resources

1. Microscopes and slides
2. Staining reagents
3. Skills lab

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MEDICAL PHYSIOLOGY

UNIT CODE: MED/CU/NUD/CC/02/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: demonstrate the knowledge of physiologic principles

Duration of Unit: 70 hours

UNIT DESCRIPTION

This unit specifies the competencies required to demonstrate the knowledge of medical physiology. It involves demonstrating the knowledge of physiologic principles, demonstrating the knowledge of human body systems, integumentary system.

Summary of Learning Outcomes

- 1 Demonstrate the knowledge of physiologic principles
- 2 Demonstrate the knowledge of the human body systems
- 3 Demonstrate the knowledge of the integumentary system

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Demonstrate the knowledge of physiologic principles	<ul style="list-style-type: none">• Functions of cellular organelles• Body fluid compartments• Units of measurement of the physiochemical constituent in cells• Concentration of solutes• Types of forces producing movement of substances between body fluid compartments	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews
2. Demonstrate the knowledge of the human body systems	<ul style="list-style-type: none">• The components of the human body systems• Relevant functions of the body systems• Relevant principles of the body systems to performance of therapy treatment• The nervous system• The cardiovascular system• The respiratory system	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews

Learning Outcome	Content	Suggested Assessment Methods
	<ul style="list-style-type: none"> • The renal system • Musculoskeletal system • Reproductive system • Skin • Gastro intestinal system • Central nervous system • Endocrine system • Special senses 	
3. Demonstrate the knowledge of the integumentary system	<ul style="list-style-type: none"> • Components of the integumentary systems • Functions of the integumentary systems 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction

Recommended Resources

- Analytical lab
- Stationery
- Microscopes and slides
- Staining reagents
- Skills lab
- Stethoscopes
- Laboratory animals

FOOD MICROBIOLOGY

UNIT CODE: MED/CU/NUD/CC/03/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: demonstrate the knowledge of food microbiological techniques

Duration of Unit: 90 hours

UNIT DESCRIPTION

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

Summary of Learning Outcomes

- 1 Demonstrate the knowledge of microorganisms in food and food environment
- 2 Demonstrate the knowledge of physiology, genetics, biochemistry and behaviour of food microorganisms
- 3 Demonstrate the knowledge of microbiology of food fermentation
- 4 Demonstrate the knowledge of microbiological aspects of food safety
- 5 Demonstrate the knowledge on methods of detection, identification and enumeration of food microorganism

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Demonstrate the knowledge of microorganisms in food and food environment	<ul style="list-style-type: none">• Meaning of terms in food microbiology• Basic types of food microorganism; bacteria, viruses, fungi, protozoa, algae• Roles of microorganisms in food safety and spoilage• Microscopy; structure, use care and maintenance	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews• Practicals
2. Demonstrate the knowledge of	<ul style="list-style-type: none">• Physiology, genetics and biochemistry of microorganisms;	<ul style="list-style-type: none">• Written .• Observation

Learning Outcome	Content	Suggested Assessment Methods
physiology, genetics, biochemistry and behaviour of food microorganisms	bacteria, fungi, viruses, protozoa, algae <ul style="list-style-type: none"> • Bacterial anatomy: Shapes and arrangement of bacteria, Cell cytology, Bacterial cell arrangement Sporulation, Cocci, bacillus , spiral chains • Factors that influence growth and activity of food microorganism; temperature, time, PH, moisture, water activity The influence of temperature on bacterial physiology and nutrition • The growth pattern of a typical bacterial colony • The gram stain method and AFB test 	<ul style="list-style-type: none"> • Third party report • Oral questioning • Interviews
3. Demonstrate the knowledge on microbiology of food fermentation	<ul style="list-style-type: none"> • Meaning of terms in food fermentation, importance of food fermentation • Microorganisms in fermentation process • Fermentation processes in different types of food; dairy products, grains, meats, fruits and vegetable and bevarages 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews • Practicals in food labs
4. Demonstrate the knowledge of microbiological aspects of food safety	<ul style="list-style-type: none"> • Meaning of terms in microbial aspects in food safety • Microbial aspects of food safety: during production, processing and labelling, food handling distribution and storage, food preparation and use 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews • Practicals

Learning Outcome	Content	Suggested Assessment Methods
5. Demonstrate the knowledge on methods of detection, identification and enumeration of food microorganism	<ul style="list-style-type: none"> • Introduction to basic laboratory equipment and materials • Methods of detection, identification and enumeration of microorganisms: staining, culturing, observation of morphology etc • 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews • Practicals

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction

Recommended Resources

1. Labs
2. Cold chains
3. Vaccines
4. Stationery
5. Staining reagents
6. Culture systems

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FOOD PROCESSING, SAFETY AND HYGIENE

UNIT CODE: MED/CU/NUD/CC/04/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: plan and manage meals

Duration of Unit: 50 hours

Unit Description

This unit specifies the competencies required for food processing, safety and hygiene. It is to include principles in food processing, methods of food preservation, food quality and safety-HACCP and hygiene practices in food handling.

Summary of Learning Outcomes

1. Identify and describe terminologies in food processing, safety and hygiene
2. Describe principles in food processing, preservation and safety
3. Identify and describe methods of food preservation
4. Identify and describe food quality and safety
5. Asses food safety and hygiene practices in food handling

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Identify and describe terminologies in food processing, safety and hygiene	<ul style="list-style-type: none">• Meaning of terms in food processing, preservation and food safety• Aims and importance of food processing, preservation and safety	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews• Practicals
2. Describe principles in food processing, preservation and safety	<ul style="list-style-type: none">• Principles in food processing, heat transfer, fluid flow, mass transfer, mixing, size adjustment separation• Methods of food processing and preservation; thermal treatment, water removal, dehydration, temperatue reduction, food irradiation, protective packaging	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews• Practicals

Learning Outcome	Content	Suggested Assessment Methods
	<ul style="list-style-type: none"> • Effects of food processing and preservation techniques on food storage sensory and nutrition properties of food • Traditional and modern methods in food processing and preservation for different food categories 	
4. Demonstrate knowledge in food quality, safety and hygiene	<ul style="list-style-type: none"> • Quality control of food and food safety during processing; from farm to fork • HACCP; principles of HACCP, developing HACCP plan, implementation and management of HACCP plan • Food safety; food poisoning, food borne illnesses, causes and prevention • Food hygiene: food handlers hygiene, food hygiene, kitchen design and surface layout, food premises and equipment hygiene, water system ventilation and waste management 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews • practicals

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction
- Role play

Recommended Resources

- WHO guidelines
- MOH
- Ministry of Education
- Skills lab
- Use of LCDs, video clips, charts and other teaching aids

- Invitation of competent expertise
- Computers with internet
- Library and resource centre

NUTRITION BIOCHEMISTRY

UNIT CODE: MED/CU/PM/CC/05/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: apply biochemical techniques.

Duration of Unit: 60 hours

UNIT DESCRIPTION

This unit specifies the competencies required to apply biochemical techniques. It involves demonstrating the knowledge of macromolecules and their metabolism, enzymes, molecular genetics and biochemistry of macronutrients

Summary of Learning Outcomes

- 1 Demonstrate the knowledge of macromolecules and their metabolism
- 2 Demonstrate the knowledge of enzymes and hormones
- 3 Demonstrate the knowledge of molecular genetics
- 4 Demonstrate the knowledge of biochemistry of macronutrients

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Demonstrate the knowledge of macromolecules and their metabolism	<ul style="list-style-type: none"> • Meaning of biochemistry • Basic structure of a living cell and how its organized to conduct its characteristic chemical function • Types of macro molecules • The structural elements of macromolecules and their interaction with other small molecules • The hierarchy of molecular organization of cells 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
2. Demonstrate the knowledge of enzymes and hormones	<ul style="list-style-type: none"> • Nature of enzymes and the process of enzyme catalysis 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning

Learning Outcome	Content	Suggested Assessment Methods
	<ul style="list-style-type: none"> • Biochemical reactions which micro and macro molecules undergo within the organisms • The structure of enzymes • The relationship among holoenzymes, apoenzymes and cofactors • The general mechanisms by which enzymes catalyze reactions • Properties of enzymes • Isoenzymes and zymogens • Functions of hormones • Secretion mode of action and regulation of hormones • Endocrine disorders 	<ul style="list-style-type: none"> • Interviews
3. Demonstrate the knowledge of molecular genetics	<ul style="list-style-type: none"> • Structural elements of chromosomes • Classification of Nucleic acids • Heterocyclic bases present in nucleic acid • Structures and functions of DNA and RNA • Pentose sugars in nucleic acid • The process of DNA replication • The process of DNA transcription • Protein synthesis process • Point mutation • Chromosomes and chromosome pathology 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
4. Demonstrate the knowledge of biochemistry of macronutrient	<ul style="list-style-type: none"> • Meaning of terms in biochemistry of macronutrients • Biochemistry of carbohydrates; structure, properties and classification of carbohydrates, carbohydrate metabolism, energy path ways and metabolic disorders of carbohydrate metabolism 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Learning Outcome	Content	Suggested Assessment Methods
	<ul style="list-style-type: none"> • Biochemistry of proteins; structure, properties and classification of proteins, protein metabolism, metabolic path ways and metabolic disorders of protein metabolism • Biochemistry of lipids; structure, properties and classification of lipids, lipid metabolism, metabolic path ways and metabolic disorders of lipid metabolism 	

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction

Recommended Resources

- Labs
- Cold chains
- Vaccines
- Stationery
- Staining reagents
- Culture systems

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RESEARCH METHODS AND STATISTICS

UNIT CODE: MED/CU/PM/CC/06/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: conduct research project

Duration of Unit: 30 hours

UNIT DESCRIPTION

This unit specifies the competencies required to conduct research in nutrition pharmacy. It involves proposal writing: identifying a research problem upon literature review, formulating objectives, hypothesis and or research questions, conducting literature review, developing research methodology, conducting data collection, conducting data analysis and presentation and preparing research report. Statistical methods: types of data, descriptive statistics, inferential statistics, confidence intervals

Summary of Learning Outcomes

1. Identify terminologies in research methods and statistics
2. Develop a research proposal
3. Conduct data collection
4. Conduct data analysis and presentation
5. Preparation of reports and dissemination

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Identify terminologies in research methods and statistics	<ul style="list-style-type: none">• Meaning of terms in research methods and statistics• Importance of research• Types of research• Sources of data for research	<ul style="list-style-type: none">• Written .• Observation• Third party report

Learning Outcome	Content	Suggested Assessment Methods
	<ul style="list-style-type: none"> • Statistical methods; data types, sampling formulars, sources of error in research and how to control them, statistical analysis of data and statistical tests; descriptive statistics, inferential statistics, confidence interval, point estimates, 	<ul style="list-style-type: none"> • Oral questioning • Interviews
<p>2. Develop a research proposal</p>	<ul style="list-style-type: none"> • Identification of research problem/title • Components of research proposal: front matter; title pagr, declaration, dedication, acknowledgement, table of content, acronyms, tables and figures and abstract. • Chapter One; background information/introduction, problem statement and justification, objectives, hypothesis/research questions, significance of the study, scope of the study, limitations, delimitations, conceptual frame work and operational definition of terms. • Chapter Two; literature review based on objectives. • Chapter Three; research methodology; study desing, study area, study variables, sample size determination, Sampling procedures, data collection tools and proceduers, Validity and reliability of data tools ethical issues in research, referece, Formulate questionnaire and other data collection tools 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Learning Outcome	Content	Suggested Assessment Methods
	<ul style="list-style-type: none"> • Back matter; Appendices; questionnaire, consent forms, budget, time frame 	
3. Conduct data collection	<ul style="list-style-type: none"> • Pre-testing of data collection tools • Sampling/ identification of respondents • Administering questionnaires and other data collection tools • Data management and data quality checks 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
4. Conduct data analysis and presentation	<ul style="list-style-type: none"> • Identification of data analysis softwarwes • Data presentation; tables, figures cahrts 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
5. Preparration of reports and desermination	<ul style="list-style-type: none"> • Scientific writing of research document; to include content in proposal changed to past tense and including chapter Four; research findings and discussions, chapter five; conclusions and recommendations • Preparation of Power point presentations and peer reviewed publications 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction

Recommended Resources

- Stationary
- Cameras

- Mode of transport
- Human and financial resources
- Research permits
- Projectors
- Computers
- Laboratory
- PPE
- Experimental sites
- Pharmaceutical firms
- Pharmacopoea
- Survey maps of the site

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CORE UNITS

NUTRITION IN EMERGENCY

UNIT CODE: MED/CU/NUD/CR/01/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: apply nutrition in emergency

Duration of Unit: 80 hours

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 interventions.

Summary of Learning Outcomes

- 1 Conduct rapid assessment on the nutrition situation
- 2 Select food and nutrition emergency responses and plan
- 3 Provide nutrition and health interventions
- 4 Monitor implementation of interventions
- 5 Document nutritional intervention during emergencies

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Conduct rapid assessment on the nutrition situation	<ul style="list-style-type: none">• Meaning of terms; nutrition in emergency, disaster, rapid nutrition assessment, emergency mitigation• Nutrition project cycle in emergency; rapid assessment; anthropometric assessment and interpretation, needs assessment in emergency• Causes/sources of emergency	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews
2. Select food and nutrition emergency responses and plan	<ul style="list-style-type: none">• Types of emergency response• Emergency response cycle• Stakeholders and their roles in in emergency Response	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews
3. Provide nutrition and	<ul style="list-style-type: none">• Prioritizing nutrition and health intervention	<ul style="list-style-type: none">• Written .• Observation

Learning Outcome	Content	Suggested Assessment Methods
health interventions	<ul style="list-style-type: none"> • Nutrition and health interventions in emergency 	<ul style="list-style-type: none"> • Third party report • Oral questioning • Interviews
4. Monitor implementation of interventions	<ul style="list-style-type: none"> • Monitoring and evaluation of nutrition and health interventions in emergency • Implementation of interventions/project implementation during emergency • 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
5. Document nutritional intervention during emergencies	<ul style="list-style-type: none"> • Nutrition and health interventions in emergency; feeding programs, nutrition education and counselling, supplementary feeding, therapeutic feeding, WASH, medical nutrition therapies, mosquito nets 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
6. Demonstrate knowledge on food Nutrition and dietetics	<ul style="list-style-type: none"> • Meaning of food Nutrition and dietetics • Food Nutrition and dietetics assessment • Component/pillars of food Nutrition and dietetics ; food availability, food accessibility, food sustainability, food and nutrient utilization • Food Nutrition and dietetics policies • Mitigation of food in Nutrition and dietetics ; food Nutrition and dietetics surveillance 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction

- Role playing

Recommended Resources

- Computers with internet
- Library and resource centre
- WHO guidelines
- MOH
- Ministry of Education
- Skills lab
- Use of LCDs, video clips, charts and other teaching aids
- Invitation of competent expertise

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NUTRITION IN LIFE CYCLE

UNIT CODE: MED/CU/NUD/CR/02/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: manage nutrition in the life cycle

Duration of Unit: 160 hours

Unit Description

This unit covers the competencies required to manage nutrition in the life cycle. It involves identifying terminologies in nutrition in the life cycle, demonstrating the knowledge of nutrition during pre-pregnancy, Pregnancy, Lactation, Infancy (0-24 months), preschoolers (25-59 months), pre-adolescents (6years-12 years), Adolescents (13years-19 years), adults (20years-60 years) and older persons/geriatric nutrition (60years and above)

Summary of Learning Outcomes

1. Identify terminologies in nutrition in the life cycle
2. Demonstrate knowledge in nutrition during pre-pregnancy
3. Demonstrate knowledge in nutrition during Pregnancy
4. Demonstrate knowledge in nutrition during Lactation
5. Demonstrate knowledge in nutrition during Infancy (0-24 months)
6. Demonstrate knowledge in nutrition for preschoolers (25-59 months)
7. Demonstrate knowledge in nutrition for pre-adolescents (6years-12 years)
8. Demonstrate knowledge in nutrition for adolescents (13years-19 years)
9. Demonstrate knowledge in nutrition for adults (20years-60 years)
10. Demonstrate knowledge in nutrition for older persons/geriatric nutrition (60years and above)

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Identify terminologies in nutrition in the life cycle	<ul style="list-style-type: none">• Meaning of terms• Lifespan stages at a glance• Importance of nutrition in the lifespan• Nutrition vulnerability• Factors determining individual nutrition needs	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews
2. Demonstrate knowledge in nutrition during pre-pregnancy	<ul style="list-style-type: none">• Pre-conception nutrition for men and women• Importance of preconception care	<ul style="list-style-type: none">• Written .• Observation• Third party report

Learning Outcome	Content	Suggested Assessment Methods
	<ul style="list-style-type: none"> • Nutrition risks/vulnerability during pre-conception • Nutrition requirements during pre-conception • 	<ul style="list-style-type: none"> • Oral questioning • Interviews
3. Demonstrate knowledge in nutrition during Pregnancy	<ul style="list-style-type: none"> • Meaning of terms during pregnancy • Stages of pregnancy and nutrition implications • Pregnancy related complications and their nutrition management • Nutrition requirements during pregnancy • Prenatal care services and interventions as per WHO recommendations • 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
4. Demonstrate knowledge in nutrition during Lactation	<ul style="list-style-type: none"> • Meaning of terms in lactation • Postnatal care services as per WHO/UNICEF recommendations • Processes of lactation; hormonal activities and lactation/milk let down process • Breast feeding: Initiation of breast feeding, attachment and positioning during breast feeding and other initiatives to promote good breastfeeding practice as per WHO/UNICEF recommendations • Nutrition requirements in lactation 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
5. Demonstrate knowledge in nutrition during Infancy(0-24 months)	<ul style="list-style-type: none"> • Meaning of terms • Nutrition requirements during 0-6 months; exclusive breast feeding as per WHO/UNICEF recommendations, developmental milestone and immunization as per WHO/UNICEF recommendation • Breast feeding in vulnerable situations; HIV and AIDS, low birth weight and pre-term babies 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Learning Outcome	Content	Suggested Assessment Methods
	<ul style="list-style-type: none"> • Initiatives to promote good breast feeding practices • Nutrition requirements and feeding of 6 months to 8 months baby; MMF, DD, MAD, breast feeding on demand responsive feeding, developmental milestone and immunization as per WHO/UNICEF recommendation • Nutrition requirements and feeding of 9- months to 11 months baby MMF, DD, MAD, breast feeding on demand responsive feeding, developmental milestone and immunization as per WHO/UNICEF recommendation • Nutrition requirements and feeding of 12- months to 24 months baby MMF, DD, MAD, breast feeding on demand responsive feeding, developmental milestone and immunization as per WHO/UNICEF recommendation 	
6. Demonstrate knowledge in nutrition for pre-schoolers (25-59 months)	<ul style="list-style-type: none"> • Meaning of terms • Developmental milestones • Nutrition vulnerability for pre-schoolers • Nutrition requirements for pre-school children 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
7. Demonstrate knowledge in nutrition for pre-adolescents (6years-12 years)	<ul style="list-style-type: none"> • Meaning of terms • Developmental milestones • Nutrition vulnerabilities for pre-adolescents • Nutrition requirements for pre-adolescents 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
8. Demonstrate knowledge in nutrition for adolescents	<ul style="list-style-type: none"> • Meaning of terms • Developmental changes • Nutrition vulnerabilities • Nutrition requirements for adolescents 	<ul style="list-style-type: none"> • Written . • Observation • Third party report

Learning Outcome	Content	Suggested Assessment Methods
(13years-19 years)	<ul style="list-style-type: none"> • Factors influencing dietary practices and food choices 	<ul style="list-style-type: none"> • Oral questioning • Interviews
9. Demonstrate knowledge in nutrition for adults (20years-60 years)	<ul style="list-style-type: none"> • Meaning of terms • Categories of adulthood, nutrition vulnerabilities and habits with nutrition implication • Nutrition requirements for early adulthood (20-40 years) • Nutrition requirements for mid adulthood (40 years-60 years) • 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
10. Demonstrate knowledge in nutrition for older persons/geriatric nutrition (60years and above)	<ul style="list-style-type: none"> • Meaning of terms • Nutrition assessment for the older persons • Physiological, psychosocial and economic changes and nutrition implications • Meal planning for the older person • Nutrition requirements for the older persons • Nutrient drug interactions for the older persons • Interventions for the older persons in Kenya 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction
- Role playing

Recommended Resources

- Computers with internet
- Library and resource centre
- WHO guidelines
- MOH

- Ministry of Education
- Skills lab
- Use of LCDs, video clips, charts and other teaching aids
- Invitation of competent expertise

PRINCIPLES OF HUMAN NUTRITION

UNIT CODE: MED/CU/NUD/CR/03/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: apply principles of human nutrition

Duration of Unit: 200 hours

Unit Description

This unit covers the competencies required to manage nutrition and dietetic services it includes: classifying different nutrients, demonstrate understanding of food metabolism, demonstrate understanding of the role of nutrition in disease occurrence and management, identifying factors that place client at nutritional risk and undertaking nutrition monitoring

Summary of Learning Outcomes

1. Classify different nutrients
2. Demonstrate understanding of food metabolism
3. Understand role of nutrition in disease occurrence and management
4. Identify factors that place client at nutritional risk
5. Undertake nutrition monitoring

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Classify different nutrients	<ul style="list-style-type: none"> • Meaning of terms; human nutrition, food, nutrients, nutrition • Classes of nutrients: macronutrients, micronutrients • Classes of macronutrients • Classes of micronutrients • Food sources of each macronutrients • Food sources of each micronutrients 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Learning Outcome	Content	Suggested Assessment Methods
	<ul style="list-style-type: none"> Physical and chemical characteristics/properties of nutrients 	
2. Demonstrate understanding of food metabolism	<ul style="list-style-type: none"> Digestion of nutrients; mechanical and chemical nutrient digestion Nutrient metabolism; carbohydrates, proteins, fats, minerals and vitamins Water and electrolytes 	<ul style="list-style-type: none"> Written . Observation Third party report Oral questioning Interviews
3. Demonstrate knowledge of nutrition through the life cycle	<ul style="list-style-type: none"> Nutrition during pregnancy Nutrition during lactation Nutrition during infancy and childhood Nutrition in adolescence Nutrition in adulthood Nutrition for the older persons 	<ul style="list-style-type: none">
4. Understand role of nutrition in disease occurrence and management	<ul style="list-style-type: none"> Energy balance Associated deficiency disorders of macronutrients Associated deficiency disorders of micronutrients Deficiencies of public health concerns Interventions to address malnutrition and micronutrient deficiencies 	<ul style="list-style-type: none"> Written . Observation Third party report Oral questioning Interviews
5. Identify factors that place client at nutritional risk	<ul style="list-style-type: none"> Determinants of malnutrition; conceptual framework on the causes of malnutrition 	<ul style="list-style-type: none"> Written . Observation Third party report Oral questioning Interviews

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee

- Discussions
- Direct instruction
- Role playing

Recommended Resources

- Computers with internet
- Library and resource centre
- WHO guidelines
- MOH
- UNICEF
- Ministry of Education
- Skills lab
- Use of LCDs, video clips, charts and other teaching aids
- Invitation of competent expertise

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NUTRITION CARE PROCESS

UNIT CODE: MED/CU/NUD/CR/04/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: examine client nutrition status

Duration of Unit: 80 hours

Unit Description

This unit specifies the competencies required to examine client nutrition status. It includes carrying out anthropometric assessments, analyzing biochemical lab results, conducting clinical and physical assessments, conducting dietary assessment, carrying out socio economic evaluation and conducting functionality assessment

Summary of Learning Outcomes

- 1 Carry out anthropometric assessments
- 2 Analyze biochemical laboratory results
- 3 Conduct clinical and physical assessments
- 4 Conduct dietary assessment
- 5 Carry out socio economic evaluation
- 6 Conduct functionality assessment

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Carry out Nutrition assessment	<ul style="list-style-type: none">• Anthropometric assessment: Anthropometric measurements, tools for measurements and interpretations of measurements based on reference standards: MUAC waist circumference and waist hip ratio, head circumference, skin fold thickness, edema, weight, height (weight for height/wasting, weight for age/underweight and height for age/stunting, BMI for age and BMI) body fat composition and distribution and bone densities,• Biochemical assessment: Biochemical indicators/biomarker, methods for biochemical analysis,	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews

Learning Outcome	Content	Suggested Assessment Methods
	<p>interpretation of various indicators as per cut offs, influence of errors on various various biomarkers eg fasting blood sugar Vs random, lipid profile</p> <ul style="list-style-type: none"> • Clinical and physical assessment: Patient medical history: refereral notes, treatment sheet, nurses cardex and patients files, Physical observation of the body, hais, nails, eyes, lips, skin, prominence of bones for a clue to a nutrition related condition or deficiencies eg wasting, anemia, dehydration, Procedures for conducting and documenting physical examination eg, paleness of the palm and duration for refill upon pressing the palm, color, texture and distributuin of the hair, paleness of the conjunctiva • Dietary assessment: Dietary method: 24-hour recal, food frequency, food diery and food weighing, Roles of dietary assessment methods, Tools for dietary assessment: 24-hour recall questionnaire, food frequency questionnaire, food diaries template, Food and nutrient analysis indicators and interpretation: analysis of 24-hour recall data, food frequency data, food diary data, Interpreting results of the dietary intakes using varipous cut offs eg minimum food frequency, number of meals in 24-hours, diatary diversity, minimum acceptable diets and dietary diversity for women • Socio-economic assessment: Establishing patients demographic and socioeconomic status: patients 	

Learning Outcome	Content	Suggested Assessment Methods
	<p>history and profile as per the patients file, social workers file</p> <ul style="list-style-type: none"> • Functionality assessment: Methods for assessing physical activity levels: eg hand grip, ability to self feed, ambulant, wheel chair bond, Categories and cut offs of physical activity eg sedentary, light activity, moderate activity, high activity and highly active 	
2. Conduct nutrition diagnosis	<ul style="list-style-type: none"> • Determine underlying medical condition as per the patients file • Determine nutrition problem: Labelling and classifying the specific nutrition problem • Explore etiology of the conditions: Determine the causes and risk factors of the identified problems • Assess signs and symptoms of the problems: Describe signs and symptoms of the nutrition related problems and conditions • Make nutrition diagnosis: Singling out specific macro and micronutrient deficiencies and other nutrition related conditions such as type II diabetes melitus 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
3. Prescription of appropriate diets and other nutrition intervention	<ul style="list-style-type: none"> • Prioritize nutrition needs: Critical nutrition deficiencies and conditions are managed/addressed eg management of malnutrition/nutrient deficiencies and stabilization of other key hemodynamics • Select appropriate nutrition intervention: Identifying suitable nutrition interventions for various nutrition deficiencies and conditions eg nutrition education and 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Learning Outcome	Content	Suggested Assessment Methods
	<p>counselling, food by prescription, therapeutic feeding, supplementary feeding, micronutrient supplementation, enteral and parenteral nutrition</p> <ul style="list-style-type: none"> • Design diet plan: Diet perescriptions and description of modified diets to include clear liquid diets, full liquid diet, light/soft diets, high calorie diet, calorie restricted diet, high protein diet, low protein diet, sodium restricted diets, fat restricted diets, fiber restricted diets, high fiber diets, bland diets, elimination of suspect foods for allergies, frequency of feeding, • Implement the designed care plan: Determination of energy/caloric needs of the patient/client using relevant equations such as Harris Benedict: Nutrition counselling and guide on thw modified doets, documentation 	
4. Conduct monitoring of the interventions	<ul style="list-style-type: none"> • Carryout daily monitoring of the patients uptake and response to the interventions and nutrition prescriptions and documentation • 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
5. Conduct evaluation of the nutrion care process	<ul style="list-style-type: none"> • Aseess the outcomes of interventions and the entire nutrion care process indicators for correcting the diagnosed nutrition problems 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction
- Role playing

Recommended Resources

- Computers with internet
- Library and resource centre
- WHO guidelines
- MOH
- Ministry of Education
- Skills lab
- Use of LCDs, video clips, charts and other teaching aids
- Invitation of competent expertise

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MEAL PLANNING AND MANAGEMENT

UNIT CODE: MED/CU/NUD/CR/05/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: plan and manage meals

Duration of Unit: 90 hours

Unit Description

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

Summary of Learning Outcomes

1. Determine client nutritional needs
2. Assist client with meal selection
3. Formulate diet recipes and menu
4. Prepare formulated meals
5. Assess food safety and hygiene
6. Document meal planning and management

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Determine client nutritional needs	<ul style="list-style-type: none">• Meaning of terms Meal planning, meal management, meal service,• Advantages of meal planning,• Factors to consider when planning meals,• Quality and quantity control in meal planning• Diet planning principles; adequacy, variety, energy dense nutrient density, moderation and energy density• Diet planning tools; food pyramid, food exchange list, food composition table, reference manuals, RDI, RDA etc•	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews

Learning Outcome	Content	Suggested Assessment Methods
2. Assist client with meal selection	<ul style="list-style-type: none"> • Factors influencing food choices • Factors to consider when planning meals for various groups: Family (infants and children, pre-schoolers, pre-adolescents, adolescents, adults, older person, vulnerable group, invalids, pregnant and lactating women) • Planning meals for institutions/schools, prisons, cooperatives, organized groups, occasions, • Kitchen and food service equipment 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
3. Formulate diet recipes and menu	<ul style="list-style-type: none"> • Menu planning, types of menu, table d'hôte, à la carte • Recipe development • Menu costing (formulation of budget/shopping list/price list, costing sheet) 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
4. Prepare formulated meals	<ul style="list-style-type: none"> • Categories of meal courses • Production of various foods within the courses, breads and starch, soups, vegetables, fruits, proteins, juices, cakes, snacks etc • Food service; types of food service 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews • Practicals
5. Assess food safety and hygiene	<ul style="list-style-type: none"> • Personal hygiene; own grooming, dress code, head gear, protective gear • Food hygiene • Kitchen hygiene and layout • Environmental hygiene • HACCP 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Learning Outcome	Content	Suggested Assessment Methods
6. Document meal planning and management	<ul style="list-style-type: none"> • Record keeping and inventory 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction
- Role play

Recommended Resources

- WHO guidelines
- MOH
- Ministry of Education
- Skills lab
- Use of LCDs, video clips, charts and other teaching aids
- Invitation of competent expertise
- Computers with internet
- Library and resource centre

MATERNAL, INFANT AND CHILD NUTRITION

UNIT CODE: MED/CU/NUD/CR/06/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: manage maternal , infant and child nutrition

Duration of Unit: 220 hours

Unit Description

This unit specifies the competencies required to manage maternal and child nutrition.it involves advising on nutrition requirement during pregnancy, managing preterm and low birth weight baby, informing on complementary feeding and weaning, managing challenges in maternal child nutrition, providing nutrient supplementation in pregnancy and childhood and documenting maternal and child nutrition care

Summary of Learning Outcomes

- 1 Advice on nutrition requirement during pregnancy
- 2 Manage preterm and low birth weight baby
- 3 Inform on complementary feeding and weaning
- 4 Manage challenges in maternal child nutrition
- 5 Provide nutrient supplementation in pregnancy and childhood
- 6 Document maternal and child nutrition care

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Advice on nutrition requirement during pregnancy	<ul style="list-style-type: none">• Critical stages in pregnancy; implantation, differentiation and growth• Weight monitoring and gain during pregnancy• Pregnancy induced conditions and complications• Management/interventions for macro and micronutrient deficiencies during pregnancy (IFAS), ANC attendance and preparations/planning for delivery• Nutrition requirements during pregnancy; energy, protein, fat, vitamins, minerals, water	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews• Written .• Observation• Third party report• Oral questioning• Interviews

Learning Outcome	Content	Suggested Assessment Methods
2. Advice on nutrition requirement during lactation	<ul style="list-style-type: none"> • Meaning of lactation, breast feeding, colostrum, fore milk, hind milk • Processes of lactation; hormaonal control of lactation • Comparison of nutrient contents of breast milk and breast milk substitutes • Nutrition requirements during lactation; energy, protein, fat, vitamins, minerals and fluids and water • Strategies to support lacating mother to breast feed exclusively for 6 months • BMS code, BFHI, BFCI • Supplementation during lactation 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
3. Manage preterm and low birth weight baby	<ul style="list-style-type: none"> • Nutrition interventions for pre-term and low birth weight babies, kangaroo, fortification of breast milk, • Feeding of a neonate in the incubator, enteral nutrition and parenteral nutrition 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
4. Inform on breast feeding	<ul style="list-style-type: none"> • Exclusive breast feeding and its benefits, duration of EBF • Feeding on colostrum, benefits of colostrum and breast feeding • Breast feeding in challenging situations/Replacement feeding 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
5. Inform on complementary feeding	<ul style="list-style-type: none"> • Copponents of complementary feeding; timely introduction to complementary feeding, meal frequencies for breast fed and non breast fed infants, dietary diversity, minimum acceptable diets, responsive feeding 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Learning Outcome	Content	Suggested Assessment Methods
	<ul style="list-style-type: none"> • Energy requirements for infants 6-23 months • Continued breast feeding at 2 years and beyond • Hygiene water and food handling • Feeding containers • Growth monitoring and immunization protocols 	
6. Manage challenges in maternal child nutrition	<ul style="list-style-type: none"> • Management of infant nutrition challenges; spina bifida, cleft lip/palate, cretinism, phenylketonuria • Management of maternal nutrition challenges; medical conditions 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
7. Provide nutrient supplementation in pregnancy and childhood	<ul style="list-style-type: none"> • Micronutrient supplementation protocols for pregnant, lactating mothers and children 0-59 months 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
8. Document maternal and child nutrition care	<ul style="list-style-type: none"> • Registers and record keeping of maternal infant and young child services 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction
- Role playing

Recommended Resources

- WHO guidelines
- MOH
- Ministry of Education
- Skills lab
- Use of LCDs, video clips, charts and other teaching aids
- Invitation of competent expertise
- Computers with internet
- Library and resource centre

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NUTRITION EDUCATION AND COUNSELLING

UNIT CODE: MED/CU/NUD/CR/07/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: conduct nutrition education and counselling

Duration of Unit: 70 hours

Unit Description

This unit specifies the competencies required to manage nutrition and dietetic services. It includes: assessing concepts of counselling, evaluating patients' response to nutritional care plan, exploring dietary modifications and supporting the client with acceptance of nutrition care plan.

Summary of Learning Outcomes

1. Assess concepts of counselling
2. Evaluate patients' response to nutritional care plan
3. Explore dietary modifications
4. Support the client with acceptance of nutrition care plan

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Assess concepts of counselling	<ul style="list-style-type: none">• Meaning of nutrition education and counselling• Counselling environment and requirements• Importance of nutrition counselling• Counselling techniques eg empathy etc• Steps in nutrition counselling• Tools and items used in nutrition education and counselling eg food models, charts• Key messages for nutrition education and counselling	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews• Charts• Food models
2. Evaluate patients' response to nutritional care plan	<ul style="list-style-type: none">• Students to be taken through counselling steps practically and produce/construct counselling cards	<ul style="list-style-type: none">• Written .• Observation• Third party report

Learning Outcome	Content	Suggested Assessment Methods
	<ul style="list-style-type: none"> Follow up, appointment cards/TCAs 	<ul style="list-style-type: none"> Oral questioning Interviews Role playing
3. Explore dietary modifications	<ul style="list-style-type: none"> Nutrition counselling in different disease state Use of counselling cards and other counselling aids as appropriate Specific modifications 	<ul style="list-style-type: none"> Written . Observation Third party report Oral questioning Interviews
4. Support the client with acceptance of nutrition care plan	<ul style="list-style-type: none"> Preparation of food and meal plans for the client Follow up on the implementation and uptake of food and meal plans as implemented by the client , use of TCAs Provision of dietary brochures and other education materials for the patient to support chnge and uptake of the modified diets 	<ul style="list-style-type: none"> Written . Observation Third party report Oral questioning Interviews

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction
- Role play

Recommended Resources

- WHO guidelines
- MOH
- Ministry of Education
- Skills lab
- Use of LCDs, video clips, charts and other teaching aids
- Invitation of compeptent expertise
- Computers with internet
- Library and resource centre

DIET THERAPY I

UNIT CODE: MED/CU/NUD/CR/08/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: provide diet therapy

Duration of Unit: 80 hours

Unit Description

This unit covers the unit of competency provide diet therapy in diseases states. involving GIT disorders; diarrhoea, nausea and vomiting, constipation, peptic ulcers, gastritis, diverticular disease, hiatal hernia, celiac disease. Febrile disorders; malaria, pneumonia, coughs, TB, measles and cancers.

Summary of Learning Outcomes

1. Identify terminologies in diet therapy I
2. Demonstrate understanding in nutrition management of GIT disorders
3. Demonstrate understanding in nutrition management of the respiratory and febrile disorders
4. Demonstrate understanding in nutritional management of cancers
5. Demonstrate understanding in nutritional management of HIV and AIDS
6. Demonstrate understanding in nutritional management of childhood disorders

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Identify terminologies in diet therapy	<ul style="list-style-type: none">• Meaning of diet therapy• Relationship between nutrition and disease• Roles of nutrition in the management of disease• Diet planning principles• Objectives of diet therapy	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews
2. Demonstrate understanding in nutrition management of GIT disorders	<ul style="list-style-type: none">• Meaning of terms in GIT disorders• Disorders of the upper GIT; nausea and vomiting, esophagitis, reflux esophagitis,• Disorders of the lower GIT; peptic ulcers, bloating, constipation, indigestion,	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews

Learning Outcome	Content	Suggested Assessment Methods
	gastritis, diverticulosis, hital hernia, diarrhea, steatorrhea, Inflammatory bowel syndrom <ul style="list-style-type: none"> • Nutritional management of GIT disorders 	
3. Demonstrate understanding in nutrition management of the respiratory and febrile disorders	<ul style="list-style-type: none"> • Meaning of terms in respiratory disorders and nutrition management of allergies • Disorders of upper and lower respiratory tract; acute rhinitis, coughps, bronchitis, nutrition management of these disorders • Acute febrile disorders; malaria, typhoid, measles,pneumonia, and TB, nutrition management of these diseases 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
4. Demonstrate understanding in nutritional management of cancers	<ul style="list-style-type: none"> • Meaning of terms • Pathophysiology in cancers • Types of cancers • Etiology of cancers • Cancer treatment and nutrition implications • Nutritional management of cancers 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
5. Demonstrate understanding in nutritional management of HIV and AIDS	<ul style="list-style-type: none"> • Meaning of terms; transmission of HIV, stages in HIV/HIV progression • Relationship between malnutrition and HIV and AIDS, roles of nutrition in management of HIV and AIDS • Nutritional management of opportunistic infections • Infant and young child feeding in the context of HIV and AIDS • Nutritent drug interactions in ART 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Learning Outcome	Content	Suggested Assessment Methods
6. Demonstrate understanding in nutritional management of childhood disorders	<ul style="list-style-type: none"> • Meaning of terms • Autism and ADHD • Cerebral palsy • Down syndrome • Epilepsy • Nutritional management of childhood disorders 	<ul style="list-style-type: none"> <input type="checkbox"/> Written . <input type="checkbox"/> Observation <input type="checkbox"/> Third party report <input type="checkbox"/> Oral questioning <input type="checkbox"/> Interviews

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction

Recommended Resources

1. WHO guidelines
2. MOH
3. Ministry of Education
4. Skills lab
5. Use of LCDs, video clips, charts and other teaching aids
6. Invitation of competent expertise
7. Computers with internet
8. Library and resource centre

DIET THERAPY II

UNIT CODE: MED/CU/NUD/CR/09/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency:

Duration of Unit: 80 hours

Unit Description

This unit covers the competencies required to provide diet therapy II. It includes, identifying terminologies in diet therapy II, demonstrating understanding in nutritional management of CVDs, demonstrating understanding in nutritional management of the renal disorders, demonstrating understanding in nutritional management of liver and gallbladder disorders, demonstrating understanding in nutritional management of metabolic disorders and demonstrating understanding in nutritional management of mental and mood disorders.

Summary of Learning Outcomes

1. Identify terminologies in diet therapy II
2. Demonstrate understanding in nutritional management of CVDs
3. Demonstrate understanding in nutritional management of the renal disorders
4. Demonstrate understanding in nutritional management of liver and gallbladder disorders
5. Demonstrate understanding in nutritional management of metabolic disorders
6. Demonstrate understanding in nutritional management of mental and mood disorders

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Identify terminologies in diet therapy	<ul style="list-style-type: none">• Meaning of diet therapy• Relationship between nutrition and disease• Roles of nutrition in the management of disease• Objectives of diet therapy	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews
2. Demonstrate understanding in nutrition management of CVDs	<ul style="list-style-type: none">• Meaning of terms in CVDs• CVD disorders; Artherosclerosis, stroke, hypertension, myocardial	<ul style="list-style-type: none">• Written .• Observation• Third party report

Learning Outcome	Content	Suggested Assessment Methods
	<p>infarction, angina pectoris, deep vein thrombosis</p> <ul style="list-style-type: none"> • Nutritional management of CVDs 	<ul style="list-style-type: none"> • Oral questioning • Interviews
3. Demonstrate understanding in nutrition management of the renal disorders	<ul style="list-style-type: none"> • Meaning of terms in renal disorders • Renal disorders and pathophysiology; glomerulonephritis, nephrotic syndrome, kidney stones AKD, CKD, kidney failure • Nutritional amangement of renal disorders 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
4. Demonstrate understanding in nutritional management of liver and gallbladder disorders	<ul style="list-style-type: none"> • Meaning of terms in liver and gallbladder disorders • Liver and gallbladder disease and their pathophysiology; jondice, liver encephalopathy, hepatitis, alcoholic liver disease, liver cirrhosis, gallbladder disease, disease of the pancrease • Nutritional management of liver and gallbladder disorders 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
5. Demonstrate understanding in nutritional management of metabolic disorders	<ul style="list-style-type: none"> • Meaning of terms in metabolic disorders • Metabolic disorder and their pathophysiology • Nutritional management of metabolic disorders 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
6. Demonstrate understanding in nutritional management of mental and mood disorders	<ul style="list-style-type: none"> • Meaning of terms in mental and mood disorders • Mental and mood disorder and their pathophysiology; schizophrenia, bipolar, depression anxiety disorders, postrauma stress (PTSD) disorders. • Nutritional management of mental and mood disorders 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Learning Outcome	Content	Suggested Assessment Methods
7. Demonstrate understanding in nutritional management of degenerative disorders	<ul style="list-style-type: none"> • Meaning of terms in degenerative disorders • Rheumatic disorders, their pathophysiology and nutritional management • Gout, its pathophysiology and nutritional management • Osteoporosis its pathophysiology and nutritional management • Dementia, alzheimer's, pakinson's disease their pathophysiology and nutritional management 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction

Recommended Resources

1. WHO guidelines
2. MOH
3. Ministry of Education
4. Skills lab
5. Use of LCDs, video clips, charts and other teaching aids
6. Invitation of competent expertise
7. Computers with internet
8. Library and resource centre

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DIETETICS

UNIT CODE: MED/CU/NUD/CR/10/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: perform dietetics operations

Duration of Unit: 210 hours

Unit Description

This unit covers the competencies required to perform dietetics operations. It includes identifying terminologies in dietetics, demonstrating understanding of modified diets, demonstrating understanding in enteral nutrition, demonstrating understanding in parenteral nutrition, demonstrating understanding in nutritional management of surgery, trauma, and burn, demonstrating understanding of palliative and hospice care and demonstrating understanding in nutrient drug interactions.

Summary of Learning Outcomes

1. Identify terminologies in dietetics
2. Demonstrate understanding in diet modification for different conditions and diseases
3. Demonstrate understanding in enteral and parenteral nutrition
4. Demonstrate understanding in nutritional management of surgery, trauma, and burn
5. Demonstrate understanding of palliative and hospice care
6. Demonstrate understanding in nutrient drug interactions

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Identify terminologies in dietetics	<ul style="list-style-type: none">• Terminologies under dietetics• Description of normal and modified diets	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews
2. Demonstrate understanding of modified diets	<ul style="list-style-type: none">• Factors to consider when modifying a diet• Therapeutic modification of normal diet: modification in consistency; clear liquid diet, full liquid diet, thick liquid diet,	<ul style="list-style-type: none">• Written .• Observation• Third party report

Learning Outcome	Content	Suggested Assessment Methods
	<p>blenderrilizrd/soft or light, their purpose, characteristics and indication.</p> <ul style="list-style-type: none"> • Modification in fiber content; high fiber diet, low fiber diet or fiber restricted diet, their purpose, characteristics and indication • Modification in energy: high energy diet, calorie restricted diet, their purpose, characteristics and indication • Modification in one or more nutrients; fat restricted diet, sodium restricted, low protein, high protein bland diet. Their purpose, characteristics and indication • Exclusion of certain foods from the diet in alleegic conditions, increasing frequency of feeding 	<ul style="list-style-type: none"> • Oral questioning • Interviews
<p>3. Demonstrate understanding in enteral nutrition</p>	<ul style="list-style-type: none"> • Meaning of terms in enteral nutrition indication for enteral nutrition, equipments used in enteral nutrition • Tube feeding/enteral nutrition routes: nasogastric, orogastric, nasodoudenal, nasojejunal, esophagastomy, gastrostomy and jejunostomy, tube feeding instructions, complications of tube feeding • Types of enteral formulars; standard formula, hydrolized formularrders, enteral formular classifications 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Learning Outcome	Content	Suggested Assessment Methods
4. Demonstrate understanding in parenteral nutrition	<ul style="list-style-type: none"> • Meaning of terms in parenteral nutrition indication for parenteral nutrition, equipments used in parenteral nutrition • Parenteral nutrition routes; Total Parenteral Nutrition(TPN), Peripheral Parenteral Nutrition (PPN) • Parenteral nutrition formulars; indications of tube feeding • Administration of parenteral nutrition: all in one single bottle, chamber bags • Complications of parenteral nutrition and their nutritional management 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews • Practicals
5. Demonstrate understanding in nutritional management of surgery, trauma, and burn	<ul style="list-style-type: none"> • Meaning of terms in surgery, trauma and burns • Burns; causes, classification and nutrition implications of burns, special concerns in burns, aims in nutrition management and dietary management based on TBSA/degree of burn • Surgery; nutrition implications of surgery, pre-surgery nutrition, post surgery nutrition, nutrition support in various surgical conditions, rehabilitation post surgery 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews
6. Demonstrate understanding of palliative and hospice care	<ul style="list-style-type: none"> • Meaning of terms in palliative and hospice care • Nutrition support during palliative and hospice care. • 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Learning Outcome	Content	Suggested Assessment Methods
7. Demonstrate understanding in nutrient drug interactions	<ul style="list-style-type: none"> • Meaning of terms in nutritint drug interactions • Specific drug nutrient interactions with nutrition implications 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction

Recommended Resources

1. WHO guidelines
2. MOH
3. Ministry of Education
4. Skills lab
5. Use of LCDs, video clips, charts and other teaching aids
6. Invitation of compeptent expertise
7. Computers with internet
8. Library and resource centre

NUTRITION ASSESSMENT AND SURVEILLANCE

UNIT CODE: MED/CU/NUD/CR/11/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: conduct nutrition assessment and surveillance

Duration of Unit: 70 hours

Unit Description

This unit covers the competencies required to conduct nutrition assessment and surveillance .it includes conducting anthropometric assessment, interpreting biochemical assessment result, conducting clinical examination, conducting dietary surveys, conducting nutrition surveillance and conducting program monitoring and evaluation

Summary of Learning Outcomes

- 1 Conduct anthropometric assessment
- 2 Interpret biochemical assessment result
- 3 Conduct clinical examination
- 4 Conduct dietary surveys
- 5 Conduct nutrition surveillance

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Conduct dietary surveys	<ul style="list-style-type: none">• Meaning of nutrition and dietary surveys• Importance of nutrition surveys• Methods of coconducting nutrition surveys• Indicators for nutrition surveys• Steps in conducting nutrition surveys (nutrition survey designs, sampling methods, determining sampling size, data collection tools etc• Data analysis and reporting	<ul style="list-style-type: none">• Written .• Observation• Third party report• Oral questioning• Interviews

Learning Outcome	Content	Suggested Assessment Methods
2. Conduct nutrition surveillance	<ul style="list-style-type: none"> • Meaning of surveillance • Surveillance systems • Importance of surveillance • Nutrition information systems 	<ul style="list-style-type: none"> • Written . • Observation • Third party report • Oral questioning • Interviews

Suggested Methods of Delivery

- Projects
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction

Recommended Resources

- Computers with internet
- Library and resource centre
- WHO guidelines
- MOH
- Ministry of Education
- Skills lab
- Use of LCDs, video clips, charts and other teaching aids
- Invitation of competent expertise

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