ECSA – HC

East, Central, and Southern Africa Health Community

Regional Model Nutrition Curriculum for Frontline Health Workers

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ABBREVIATIONS AND ACRONYMS

AU	Africa Union
AIDS	Acquired Immune Deficiency Syndrome
BMS	Breast Milk Substitutes
CAT	Continuous Assessment Tests
COMESA	Common Market for Eastern and Southern Africa
EAC	East Africa Community
ECSA	East, Central and Southern Africa- Health Community
HCP	Health Care Providers
HiNi	High impact Nutrition interventions
HIV	Human Immunodeficiency Virus
ICN	International Conference on Nutrition
ICT	Information Communication Technology
KFNSP	Kenya Food and Nutrition Security Policy
KHSSP	Kenya Health Sector Strategic and Investment Plan
KNDI	Kenya Nutrition and Dietetics Institute
MDG	Millennium Development Goals
MOH	Ministry of Health
NEPAD	New Partnership for Africa's Development
PEP	Post Exposure Prophylaxis
PLHIV	Persons living with HIV
PWD	Persons with Disability
QA	Quality Assurance
QI	Quality Improvement
SDG	Sustainable Development Goals
SUN	Scaling up Nutrition
UNICEF	United Nations International Children's Emergency Fund
UNDP	United Nations Development Program
UNHCR	United Nations High Commissioner for Refugees
WHO	World Health Organization

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FOREWORD

The East, Central and Southern African Health Community (ECSA-HC) has continued to undertake advocacy and technical assistance to embrace and scale up nutrition interventions as a key strategy to reduce the burden of malnutrition in the region. Among its member states, ECSA-HC promote sharing of experiences and best practices, identifying priorities, building capacity and advocating for improved policies and programmes in the region.

Nutrition training of frontline workers is one of the key actions necessary to facilitate the implementation and scaling up of high impact nutrition interventions in the region. Specifically, trained frontline nutrition workforce will improve the service delivery to the end users at all levels.

Since malnutrition has many different causes and consequences, a multi-sectoral approach is needed to address this issue. This pre-service model curriculum aim to build the knowledge, skills and competences of frontline workers working at health facility in order to improve the nutrition practices and maximize nutritional benefits. This model nutrition curriculum has been developed to provide technical reference resources that cover nutrition specific and sensitive topics necessary for the frontline workers in all contexts.

It is my hope that the use of this model nutrition curriculum will help to strengthen the nutrition practices in our countries in an effort to scale up effective implementation of high impact nutrition interventions in the region.

Professor Yoswa Mbulalina Dambisya
Director General, ESCA-HC

Disclaimer: The content of these pre service model nutrition curriculum can be adapted to suit country specific contexts. In such a case, the content of the resulting document will be the sole responsibility of the organization adapting and will not represent the views of the authors and that of the ECSA-HC. The Use of the content of these model curriculum should be duly acknowledged.

OPERATIONAL DEFINITIONS

Academic programme - means the design of learning content, which is multi-dimensional and includes intentions, structure of content, delivery modes, academic resources and assessment modes**;**

Curriculum— a program of learning that specifies the learning outcomes, content and assessment strategy for evaluating learner performance. It consists of a document that describes desired knowledge, skills, performance, the process and content that will be used to achieve the learning outcomes. Detailed curricula may also specify training activities and methods, materials, facilities, and resources required for a specific lesson ; any documented programme of study

Competency—a specific set of knowledge, skills, behaviors and attitudes required to perform a job; also defined measure of skill or aptitude against which individuals and organizations can be assessed**.**

Course - means a single unit in a programme of study

Lecture hour - means a period of time equivalent to one hour and representing one such instructional hour in lecture form, two in a tutorial or open learning session, three in a laboratory practical or practicum and five in farm or similar practice;

Model – means a system or thing used as an example to follow or imitate.

“the law became a model for dozens of laws banning non - degradable plastic products synonyms: prototype, stereotype, archetype, type, version; mold, template, framework, pattern, design, blueprint “the Canadian model of health care” prototypical, prototypal, archetypal “model farms”

Programme of study - means the prescribed syllabus that students must be taught at each key stage;

Training package— a set of materials or tools for training and assessment. In some situations specifically developed to lead to nationally recognized qualifications. A training package outlines the knowledge and skills required, as well as the standard of performance required for an employee to be considered ‘competent’. The package may also set national qualifications and guidelines for assessment**.**

Training Institution: A school that offers health related courses at all levels of training.

Skill Gaps: This refers to underperformance observed in an employee due to inadequate skills.

Standards a set of generally accepted levels of performance; also is a standards reference point against which different aspects of the programme are compared or evaluated for quality.

Syllabus- Is an academic document that communicates course information and defines expections and responsibilities it’s descriptive (unlike the prescriptive or specific curriculum)

Training: Planned process to modify attitude, knowledge, skill or behavior through learning experience to achieve effective performance in an activity or range of activities.

1 INTRODUCTION AND BACKGROUND

ECSA Health Community with the support from the World Bank is implementing a capacity development project for frontline workers in Kenya, Tanzania and Uganda. This mandate involves building capacity of health workers at facility and community levels to provide nutrition services. The capacity assessment of the nutrition workforce in Kenya, Tanzania and Uganda conducted by Helen Keller International in partnership with World Bank, UNICEF, and others in 2011 found that insufficient knowledge and practical experience of front line workers is a major barrier to implementing nutrition interventions at both health facility and community level in all three countries. This notwithstanding malnutrition still poses a major challenge in East Africa; all the three countries have very high levels of stunting, 35 percent in Tanzania, 34 percent in Uganda and 26 percent in Kenya (Global Nutrition Report, 2016). There is therefore an urgent need to address chronic malnutrition in these countries.

The Global community also recognises the need to accelerate investment and action to address nutrition challenges; this has been done through the Scaling up Nutrition movement (SUN). Since its inception 57 developing and middle income countries around the world have committed to scale up nutrition interventions (Mucha & Tharaney, 2013). In 2015, the UN Sustainable Development Goals enshrined the objective of "ending all forms of malnutrition," challenging the world to think and act differently on malnutrition—to focus on all its faces and work to end it, for all people, by 2030 (ibid.) The East African countries (Kenya, Uganda and Tanzania) are part of the SUN initiative. The leaders in these countries have made political commitments and supported development of policies and action plans to operationalize and concretize these commitments. Statutory regulatory bodies to accredit training of nutritionists at different levels have been established; however gaps still exist in standardizing training and ensuring it matches local needs. There is also need to incorporate nutrition competencies in other frontline cadres' curriculum and train community health workers for a more effective response. ECSA health community is developing a prototype/model pre - service curriculum targeting nurses, mid wives, nutritionists and other health workers at facility level to bridge this gap. This curriculum will be adopted and adapted into existing ones to integrate nutrition into frontline workers curriculum.

2 RATIONALE FOR THE MODEL CURRICULUM

The East African region experiences both quantitative and qualitative deficiencies in human resources to deliver basic health, nutrition, and community services despite the challenges in under and over nutrition prevailing in the region. This curriculum seeks to incorporate nutrition and dietetics competencies into frontline health workers' curricula to build their capacity to respond to these challenges.

3 CATEGORIES OF FRONTLINE HEALTH WORKERS AND LEVELS OF HEALTH CARE SERVICE DELIVERY IN TANZANIA, KENYA AND UGANDA

It is anticipated that we shall have a broad spectrum of frontline workers providing nutrition services at different levels within the health service delivery system – from the community level to level 4 – 6 facilities. The table below provides a summary of these front line workers and the nutrition tasks they are expected to perform at the different levels. The curriculum seeks to develop content (knowledge, skills and attitudes) to enable them to perform nutrition tasks for these levels.

Table 1: Categories of frontline health workers and levels of health care service delivery and nutrition tasks they perform

Level of Facility	Front line worker category	Tasks	Content
Level 1/ community (Dispensary and community facilities)	• Community health worker • Nutrition and Dietetics technicians • Certificate nurses • Public Health/Environmental Health Technicians • Assistant Community Development Officers • Clinical Assistance • Clinical Officers • Nurse Midwife	• Promote nutrition and food security • Support nutrition awareness for orphans and vulnerable children • Refer malnutrition cases	• Communication skills • Basic applications in ICT- • Principles of human nutrition • Basic Food and Nutrition assessment • Ethics and integrity for professional practice • Nutrition and Health promotion
Level 2 (Health centers)	• Nutrition and Dietetics technicians • Nutrition Technologists • Dieticians Technologists • Diploma level clinical officer • Clinical assistant • Enrolled nurse and midwives • Registered Community health nurse/comprehensive nurse • Public Health/Environmental Health Technicians • Community Development Officers	• Promote nutrition and food security • Support nutrition awareness for orphans and vulnerable children • Refer malnutrition cases • Effectively Communicate in delivering services in nutrition • Provide basic Nutritional assessment and counseling • Provide basic Infant and Young Child feeding • Participate in distribution micronutrient supplementation • Provide basic Health education services. • Make referrals to higher level care • Make referrals to community based level care • Provide basic maternal nutrition • Demonstrate effective use of health information system	• Communication skills • Basic applications in ICT- • Principles of human nutrition • Nutrition in the life cycle • Nutrition assessment • Ethics and integrity for professional practice • Nutrition and Health education • Nutrition in disease/ conditions management

Level 3 (Sub-county hospitals)	• Nutritionists (Clinical, public health, community, food science) • Clinical Dieticians (Clinical Dietician, Food Service diet therapy) • Nutrition Technologists • Dieticians Technologists • Nutrition and Dietetics technicians • Degree Nurse • Higher National Diploma • Diploma • Certificate • Degree Clinical officers • Higher clinical officers • Diploma level clinical officer • Clinical assistant • Medical officers • Public Health/Environmental Health officers • Public Health/Environmental Health Technicians	• Conduct basic nutritional assessment triage • Participate in integrated management of malnutrition cases. • Make referrals to Level IV-VI facilities for specialist nutrition care.	• Communication skills • Basic applications in ICT- • Principles of human nutrition • Nutrition in the life cycle • Nutrition assessment • Ethics and integrity for professional practice • Health education • Nutrition in disease/ conditions management • Basic Health Information systems management • Basic sociology
Level 4-6 Hospitals	• Nutritionists (Clinical, public health, community, food science) • Clinical Dieticians (Clinical Dietician, Food Service diet therapy) • Nutrition Technologists • Dieticians Technologists • Nutrition and Dietetics technicians • Degree Nurse • Higher National Diploma • Diploma • Certificate • Degree Clinical officers • Higher clinical officers • Diploma level clinical officer • Clinical assistant • Medical officers • Public Health/Environmental Health officers • Public Health/Environmental Health Technicians • Community Oral Health Officers	Specialist nutrition services	• Communication skills • Basic applications in ICT- • Principles of human nutrition • Nutrition in the life cycle • Nutrition assessment • Ethics and integrity for professional practice • Health education • Nutrition in disease/ conditions management • Basic Health Information systems management • Basic sociology • Basic psychology • Leadership and management

4 EDUCATION AND TRAINING LEVELS

This curriculum proposes a modular approach for three levels of education and training, i.e. certificate, diploma and degree to be integrated within existing curricula of the different cadres of frontline health workers. The frontline workers trained at these levels will serve at different levels of health service delivery.

Purpose of the Model Curriculum

The purpose of this model curriculum is to build capacity of frontline workers to provide nutrition services. The proposed modules and units will be integrated into already existing curricula of the different cadres of frontline at certificate, diploma or degree levels. The curriculum will therefore not operate in isolation

Expected Learning Outcomes for the Programme

1. Apply communication skills in provision of nutrition and dietetics services
2. Use ICT knowledge and relevant computer software to provide nutrition and dietetics services
3. Conduct basic nutrition and dietetics assessment
4. Provide basic nutrition and dietetics counselling, advice and services based on nutrition sciences
5. Manage basic nutrition programmes and services
6. Provide basic health education on nutrition and dietetics to the public
7. Participate in nutrition and dietetics research
8. Participate in Monitoring and evaluation of project/programmes on nutrition and dietetics.
9. Refer critical cases for higher level nutrition and dietetics care to qualified nutritionists and/dieticians.

5 COURSE STRUCTURE

This course is organised under three modules, each targeting frontline workers providing nutrition services at different levels of the health system. The modules are equated to certificate, diploma and degree levels for ease in integration into already existing curriculum.

The table below provides a summary of the course content, hours and credits covered at these levels. The following formula has been used for credit allocation: 1 Unit = 1 Lecture Hour = 3 practical hours = 5 clinical or community hours. The total credits units provided per semester/ trimester are 24 in the three East African countries. Each unit/course has 3 credit units per semester; this must be apportioned for theory and practical sessions. You need 8 courses per semester to attain the 24 credits units. If a course is purely theoretical and is implemented in 15 weeks, this will translate into 3 contacts hours per week for the period multiplied by 15 which equals 45 hours. If a course has both theoretical and practical sessions and running for 15 weeks, out of the three credit units allocated per semester, 1 credit unit will be for practical sessions, while 2 credit units will be for theory. To convert this into contact hours, the one credit unit of practical is equivalent to 3 contact hours, while two credit units of theory is equivalent to two contact hours per week. The total contact hours for this course are therefore 5 hours per week. For fifteen weeks this will translate to 75 contact hours, 2 hours of theory for 15 week which equals 30 hours and 3 hours of practical which equals 45 hours hence 75 hours.

For a course that theoretical, practical and clinical/community sessions and running for 15 weeks the three credit units will be apportioned as follows: 1 credit unit for theory, 1 credit unit for practicals and 1 credit unit for clinicals or community. This translates to 1 contact hour of theory, 3 contact hours of practical and 5 contact hours of clinical or community, which equals 9 hours per week. The contact hours for semester equals 135

Module 1 – Certificate Level				
	Contact Hours			
Units	Theory	Practical	Total Hours	Credits
Communication skills	45		45	3
Basic applications in ICT-	30	45	75	3
Principles of human nutrition	30	45	75	3
Basic assessment in Food and Nutrition	30	45	75	3
Ethics and integrity for professional practice	45		45	3
Nutrition and Health promotion	45		45	3
Total	225	135	360	18

COURSE STRUCTURE

Module 2 – Diploma Level				
Units	Theory	Practical	Total Hours	Credits
Communication skills	45		45	3
Basic applications in ICT-	30	45	75	3
Principles of human nutrition	30	45	75	3
Nutrition in the life cycle	45		45	3
Nutrition assessment	30	45	75	3
Ethics and integrity for professional practice	45		45	3
Health education	45		45	3
Nutrition in disease/conditions management	30	45	75	3
Basic Health Information systems management	30	45	75	3
Basic sociology	45		45	3
Total	375	235	610	30

Module 3– Degree Level				
Units	Theory	Practical	Total Hours	Credits
Communication skills	45		45	3
Basic applications in ICT-	30	45	75	3
Principles of human nutrition	30	45	75	3
Nutrition in the life cycle	45		45	3
Nutrition assessment	30	45	75	3
Ethics and integrity for professional practice	45		45	3
Health education	45		45	3
Nutrition in disease/conditions management	30	45	75	3
Basic Health Information systems management	30	45	75	3
Basic sociology	45		45	3
Basic psychology	45		45	3
Leadership and management	45		45	3
Total	465	225	690	36

6 PROPOSED MODULES AND UNITS FOR THE PROTOTYPE CURRICULUM

The content in the modules and units is organized around competencies necessary to deliver nutrition and dietetics services at different levels by different cadres within the health service delivery system. Module one is certificate level and targets level one health workers

MODULE 1:

CERTIFICATE LEVEL: LEVEL ONE DISPENSARY AND COMMUNITY FACILITIES

Code: Hours: 360 Hours Credit: 18 credits

Module Purpose

This module is designed to enable the learner develop competencies in providing nutrition services at level one, dispensary and community facilities. The cadres working at this level are Community health volunteers/workers, CHEWs/VHT; Nutrition and Dietetics technicians, Certificate nurses and Public Health/Environmental Health Technicians.

Module Units	Hours
Communication Skills	45
Basic Applications in ICT-	70
Principles of Human Nutrition	70
Basic Assessments in Foods and Nutrition Security	70
Ethics and Integrity for Professional Practice	45
Nutrition and Health Promotion	45
Total	360

Module Content

1. Communication Skills

Purpose

The purpose of this course is to train students how to communicate effectively in both oral and written communication in the work environment. Students will also be enabled to know how to access information and use it for their study and research or any other related purpose.

Expected Learning Outcomes

1. Apply skills in behavior change communication in the context of nutrition and dietetics
2. Use communication and interpersonal skills in conduct of nutrition services

Course Content

Behavior change communication: Information Education and Communication (IEC) Materials, preparation development and distribution

Study skills: planning work, organizing and budgeting time and resources, storing and retrieving information, thinking critically, solving problems, coping with task-oriented learning.

Library skills: Understanding book classification system of Library, collecting and summarizing information, note taking and storage of information.

Listening skills: active listening, understanding lectures; , recognizing change of topic, following tutorial discussions, understanding instructions; interpreting information.

Examination skills: understanding examination, preparing and writing examinations; Community dialogue.

Mode of Delivery

Role play, group discussions, demonstration, field visits, brain storming sessions participatory lectures, Tutorials and practical.

Instructional Materials and Equipment

Chalkboard, charts, computer and accessories, textbooks, posters, DVDs, models, teaching aid and any other relevant teaching materials.

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	40%
End of Semester Examination	60%
Total marks	100%
Pass Mark	50%

Core Reference Materials

1. Becker, E. F. &Wortmann, J. (2009). Mastering Communication at Work: How to Lead, Manage, and Influence, Philadelphia. Saunders.
2. Burns, S.(2011).101 Tips for Improving Your Conversation Skills, London, Amazon Digital Services.

Recommended Reference Materials

1. Gibson, J. & Walker, E. (2011).The Art of Active Listening: How to Double Your Communication Skills, New York, Amazon Digital services.
2. Liptak, J. L., Leutenberg, E, Sippola, C. & Brodsky, A. M. (2008). The Communication Skills Workbook , California, Whole Person Associates, Inc
3. McKay, M., Davis, M. & Fanning, P. (2009).Messages: The Communication Skills Book, Third Edition Toronto, New Harbinger Publications.
4. Nielsen, J. (2008). Effective Communication Skills, Bloomington, Xlibris Corporation.
5. Young, K. S. & Travis, H. P. (2007).Oral Communication: Skills, Choices, and Consequences, Texas, Waveland Pr Inc.
6. Other relevant materials.

2. Basic Applications in ICT

Purpose

This course will enable students to acquire knowledge and skills in the application of ICT resources in nutrition and dietetic service delivery.

Expected Learning Outcomes

1. Use ICT resources in delivery of nutrition services.

Content

Introduction: Definition of ICT, basic ICT Hardware and Software; **Software applications relevant to nutrition and dietetics:** Spreadsheets; MS Excel spreadsheet; ODK technique; Ms Windows, Access and PowerPoint. **Internet applications:** electronic mail: remote log-in; searching; moving files; the World Wide Web, Internet Explorer; **Special topics:** Procurement of ICT.

Mode of Delivery

Role play, group discussions, demonstration, field visits, brain storming sessions participatory lectures, Tutorials and practical.

Instructional Materials and Equipment

Chalkboard, charts, computer and accessories, textbooks, posters, DVDs, models, teaching aid and any other relevant teaching materials.

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practicals	40%
End of Semester Examination	60%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Graham. B and Watson. D (2010). IGCSE Information and Communication Technology. UK: London Hodder Education
2. Doyle, S. (2000). Understanding Information & Communication Technology. UK: Stanley Thornes ltd.
3. Thompson, R.L &Cats-Baril, W.L. (2003). Information technology and Management. 2nd ed. New York: McGraw-Hill.
4. Frank.W (2006); Theories of the information society Edition: 3rd ed. New York : Routledge, Online Access:

Recommended Reference Materials

1. Sawyer W.(2001), Using information technology: A Practical introduction to computers New York : McGraw-Hill
2. James F. Clark (2008) Computers and Information Processing Concepts and Applications 1st Ed. USA: South Western Publishers.

3. Principles of Human Nutrition

Purpose

Students will attain knowledge on the basics of interaction of nutrients and metabolic nutrient interactions and disorders related to under and over nutrition.

Expected Learning Outcomes

1. Comprehend the composition and variation of nutrients in foods.
2. Comprehend basic interaction of nutrients and their metabolism.
3. Analyze factors influencing nutrient utilization
4. Prescribe a balanced diet, sources of nutrients and intake regulation
5. Accurately diagnose between under and over nutrition and disorders associated with them.
6. Evaluate weight control and Key contemporary nutritional issues.

Content

Definition of foods and their components; Nutrients in foods: types, function, sources and properties, **nutrient digestion**, absorption and utilization; natural and human-made factors influencing nutrient utilization; **balanced diets and disorders related to under and over nutrition**, food and diet guides, Nutrition in the life cycle: Nutrition needs for different age groups.

Mode of Delivery

Role play, group discussions, demonstration, field visits, brain storming sessions participatory lectures, Tutorials and practical.

Instructional Materials and Equipment

Chalkboard, charts, computer and accessories, textbooks, posters, DVDs, models, teaching aid and any other relevant teaching materials.

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	40%
End of Semester Examination	60%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Whitney, E. N. and Rolfes, S.R**.** (2011). Understanding Nutrition 12th ed. Wadsworth: Canada.
2. Eastwood.M (2010). Principles of Human Nutrition, 2nd ed. Blackwell Publishing: New York.
3. Gibney. M.J., Lanham-New. S.A., Cassidy. A., & Vorster, H. H.(2009). Introduction to Human Nutrition, 2nd Ed. New York: Wiley-Blackwell
4. Gibney. M, Vorster,H. H.& Kok, F J. (2002); Introduction to Human Nutrition. Wiley-Blackwell: New York.

Recommended Reference Materials

1. Webb, G.P. (2013). Nutrition: A Health promotion Approach. London: Hodder Arnold.
2. **J**oshi (2002).Nutrition And Dietetics; New York: Tata Mc-Graw Hill
3. Langley-Evans, S. (2013). Nutrition: A Lifespan approach. UK: Wiley- Blackwell.
4. Elizabeth. K. N. (2008) Basics of Foods and Nutrition . Nairobi : Aged, Children and Women Organization :

4. Basic Assessments in Foods and Nutrition Security

Purpose

Students will attain knowledge, skills and attitudes on nutritional status assessment.

Expected Learning outcomes

At the end of the course, the students should be able to:

1. Use the principles of nutritional assessment
2. Undertake nutritional assessment
3. Use the criteria for selection of method and determination of method appropriateness for different assessment needs
4. Apply assessment techniques in assessing nutritional status of various groups
5. Undertake accurate household food security assessment

Content

Household food security; principles of nutritional assessment; Basic Nutritional assessment techniques; anthropometry, clinical methods, 24-hour recall; Social economic assessment, WASH assessments, food and enviroment

Mode of Delivery

Role play, group discussions, demonstration, outreach and field visits, brain storming sessions participatory lectures Tutorials and practical.

Instructional Materials and Equipment

Chalkboard, charts, computer and accessories, textbooks, posters, DVDs, models, teaching aid and any other relevant teaching materials.

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical =	40%
End of Semester Examination	60%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Nieman, D & Lee, R (2009). Nutrition Assessment 5th ed. New York: McGraw-Hill.
2. Roth, A.R.(2013). Nutrition and diet therapy. USA: Cengage Learning.
3. Roth, A.R. & Townsend, C.F. (2003). Nutrition and Diet Therapy (8th ed). Thompson Delmar Learning. ISBN: 0766835677.
4. FSAU (2005), Nutrition guide to data collection, interpretation analysis and use, FSAU for Somalia
5. Ministry of Health and Sanitation (2008) Guidelines for Nutrition Assessments in Kenya. Kenya National Bureau of Statistics, GoK
6. Uganda Health Systems Assessment 2011
7. Tanzania National Nutrition survey 2014

Recommended Reference Materials

1. Cogill B (2001), Anthropometric indicators measurement guide, FANTA
2. Berdanier, C. D.& Zempleni, J.(2008). Advanced Nutrition Macronutrients, Micronutrients, and Metabolism, Philadelphia: CRC Press.

6. Ethics and Integrity in Professional Practice

Purpose

The purpose of this unit is to cultivate ethical awareness, sensitivity and commitment among learners in a manner that will enable them to conduct themselves with integrity in their professional work.

Expected Learning Outcome

1. Apply the concepts of ethics and integrity in the delivery of nutrition and dietetics services
2. Identify the forms, causes and consequences of corruption and the relevant mitigation and prevention mechanisms
3. Display high integrity and ethics in nutrition and dietetics service delivery
4. Apply constitutional and legal provisions that ground ethics and integrity requirements, institutions and processes,
5. Identify the place of ethics and integrity in individual and national development
6. Apply values that promote integrity
7. Evaluate human conduct using indigenous and contemporary ethical framework

Course Content

Introduction theories and Concepts in ethics, integrity and professionalism:. Code of ethics and conduct in practice; **Constitutional and legal provisions on ethics and integrity.** Ethics and integrity in individual and national development, integrity and human rights, ethical conscience building and national development, case studies on ethics and integrity. **Values that promote; integrity** fairness, selfless, humility, courage and autonomy**. Social cultural perspectives of ethics.**

Mode of Delivery

Role play, group discussions, Case studies, brain storming sessions participatory lectures, Tutorials, visual aids, drama and theatre and practical.

Instructional, Material and Equipment

Chalkboard, charts, computer and accessories, textbooks, posters, DVDs, models, teaching aid and any other relevant teaching materials.

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	40%
End of Semester Examination	60%
Total marks	100%
Pass Mark	50%

Core Reference Materials

1. Anassi, P. (2004). *Corruption in Africa: The Kenyan Experience*. Bloomington, IN: Trafford publishing.
2. Hough, D. (2013). *Corruption, anti-corruption and governance*. New york, NY: Palgrave Macmillan. Further reading material
3. Huberts, L., Maesschalk, K., & Jurkiewics, C. (Eds.). (2008). *Ethics and integrity of governance: perspectives across frontiers.* Cheltenham, UK: Edward Elgar Publishing Limited

7. Nutrition and Health Promotion

Purpose

To apply the theories, skills and methods of health and nutrition education and counseling techniques in health service delivery.

Expected Learning Outcomes

By the end of this unit the student should be able to:

1. Develop objectives for individual and group nutrition interventions for different age levels
2. Use the objectives developed to conduct education and counseling interventions
3. Apply the principles of counseling and counseling process.
4. Apply learning theories in clinical and community settings
5. Use counseling skills and theories as they apply to general health and nutrition counseling.
6. Use principles of education in teaching health and nutrition concepts to various populations.

Content

Theories, skills, and methods in nutrition and health promotion; Social behavioural change communication and community empowerment. Development of nutrition and health **promotion messages for difference target population and audience., Communication process and channels**; nutrition advocacy. Nutrition health mobilization and sensitization. **Water Sanitation and Hygiene (WASH)**, Water Safety, faecal – oral transmission, construction of wells, water sanitation, food safety, housing, water supply and sanitation. **Community Diagnosis;** Definition, The community diagnosis process, community analysis, community public health and nutrition indicators

Mode of Delivery

Role play, group discussions, demonstration, outreach and field visits, brain storming sessions participatory lectures Tutorials and practical.

Instructional Materials and Equipment

Chalkboard, charts, computer and accessories, textbooks, posters, DVDs, models, teaching aid and any other relevant teaching materials.

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Bauer, K.D, Liou, D &Sokolik, C.A (2011). Nutrition Counselling and Education Skill Development. USA: Wardsworth- Cengage Learning.
2. Isobel, R.C (2007). Nutrition Education: Linking Research, Theory and Practice. Canada: Jones & Bartlett Publishers.
3. Stanfield, P.S.(2009). Nutrition and Diet therapy: Self- Instructional Approaches. Canada: Jones & Bartlett.
4. Ministry of Health, Government of Kenya (2006). Kenya Guidelines on Nutrition and HIV.
5. Strategic and action plan for the prevention and control of None communicable diseases in Tanzania 2016 -2020
6. Kenya National Diabetes Strategy 2010-2015

Recommended Reference Materials

1. Hammond, K. A. **(**2000). Dietary and clinical assessment in Krause's Food

   Nutrition and diet therapy written by L. Kathleen Mahan, M.S., R.D. and Sylvia

   Escott-Stump, M.A., R.D., Philadelphia: W.B. Saunders Company.
2. Roth, A.R. & Townsend, C.F. (2003). Nutrition and Diet Therapy (8th ed). USA: Thompson Delmar Learning.

MODULE 2:

DIPLOMA LEVEL 1, 2 & 3

Code: Hours: 575 Credit: 30

Module Purpose

This module will enable the learner to develop competencies to provide nutrition services at level three hospitals. This level targets the cadres working at this level that will include, nutritionists (Clinical, public health, community, food science) clinical dieticians (Clinical Dietician, Food Service diet therapy), nutrition Technologists, dieticians technologists, nutrition and dietetics technicians, nurses (degree, higher national diploma, diploma, certificate levels), clinical officers (degree, higher national diploma, diploma levels), clinical assistants, medical officers, public health/environmental health officers, public health/environmental health technicians

Module Units	Hours
Communication Skills	45
Basic Applications in ICT-	70
Principles of Human Nutrition	70
Nutrition in the Life Cycle	45
Nutritional Status Assessment	70
Ethics and Integrity for Professional Practice	45
Health Education	45
Nutrition in Disease/Conditions Management	70
Basic Health Information Systems Management	70
Basic Sociology	45
Total	575

Module Content

1. Communication Skills

Purpose

The purpose of this course is to train students how to communicate effectively in both oral and written communication in the work environment. Students will also be enabled to know how to access information and use it for their study and research or any other intended purpose.

Expected Learning Outcomes

1. Apply skills in Behavior change communication
2. Demonstrate and apply study skills note/minute taking and Library skills
3. Demonstrate Reading skills
4. Practice Writing and reporting skills

Course Content

Behavior change communication; IEC Materials, preparation development and distribution **Study skills:** getting to know the academic environment; planning work, organizing and budgeting time and resources, storing and retrieving information, thinking critically, solving problems, coping with task-oriented learning, dealing with facts and opinions, drawing conclusions. **Library skills:** Understanding book classification system of Library, collecting and summarizing information, note taking and storage of information. **Reading skills:** skimming, seaming, inference and prediction; intensive and critical reading; discipline-specific reading skills. Interpretation of non-linear text; constructing and using statistical tables, indices, maps, graphs. **Listening skills:** active listening, understanding lectures; predicting lecture structure, understanding gist, recognizing change of topic, following tutorial discussions, understanding instructions. **Examination skills:** understanding examination rubrics, preparing and writing examinations.

Mode of Delivery

Lectures, Tutorials and practicals

Instructional Materials and Equipment

Chalkboard, charts, laptops, textbooks

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core Reference Materials

1. Becker, E. F. &Wortmann, J. (2009). Mastering Communication at Work: How to Lead, Manage, and Influence, Philadelphia. Saunders.
2. Burns, S.(2011).101 Tips for Improving Your Conversation Skills, London, Amazon Digital Services.

Recommended Reference Materials

1. Gibson, J. & Walker, E. (2011).The Art of Active Listening: How to Double Your Communication Skills, New York, Amazon Digital services.
2. Liptak, J. L., Leutenberg, E, Sippola, C. & Brodsky, A. M. (2008). The Communication Skills Workbook , California, Whole Person Associates, Inc
3. McKay, M., Davis, M. & Fanning, P. (2009).Messages: The Communication Skills Book,Third Edition edition Toronto, New Harbinger Publications.
4. Nielsen, J. (2008). Effective Communication Skills, Bloomington, Xlibris Corporation.
5. Young, K. S. & Travis, H. P. (2007).Oral Communication: Skills, Choices, and Consequences, Texas, Waveland Pr Inc.

E-Resources

- http://webcampus.frexelmed.edu/medethex/index.html
- *Journal of the Association for Communication Administration*

2. Basic Applications in ICT

Purpose

To enable students acquire knowledge and skills in the use of computers

Expected Learning Outcomes

1. Recognize the various components of a computer.
2. Operate a computer.
3. Use software relevant to nutrition and dietetics.

Content

Introduction: history, terminology used in computing; Computer hardware and arithmetic; Operating systems; Personal computer environment: major hardware/software components; files & folders; storage devices. Fundamentals of Microsoft windows; Word processors; The Windows MS Word processor; **Software applications relevant to nutrition and dietetics:** Spreadsheets; Using MS Excel spreadsheet; Using EPI info, SPSS, STATA, SAS, Nutrisurvey, ENA for SMART; Databases and Database Systems; Database evolution and variety; Differences between database and spreadsheets; Using Ms Windows, Access. Computer Networks; **Internet applications:** electronic mail: remote log-in; searching; moving files; the World Wide Web, Internet Explorer; **Special topics:** Computers and society- security issues, viruses, use and misuse of computers and society; graphics and multimedia; Computer languages; solving problems and creating applications; Purchasing a PC; Role of Information technology in Nutrition.

Mode of Delivery

Lectures, Tutorials, class discussions, practicals and assignments

Instructional Materials and Equipment

Chalkboard, charts, laptops, textbooks.

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Graham. B and Watson. D (2010). IGCSE Information and Communication Technology. UK: London Hodder Education
2. Doyle, S. (2000). Understanding Information & Communication Technology. UK: Stanley Thornes ltd.
3. Thompson, R.L &Cats-Baril, W.L. (2003). Information technology and Management. 2nd ed. New York: McGraw-Hill.
4. Frank.W (2006); Theories of the information society Edition: 3rd ed. New York : Routledge, Online Access:

Recommended Reference Materials

1. Sawyer W.(2001), Using information technology: A Practical introduction to computers New York : McGraw-Hill
2. James F. Clark (2008) Computers and Information Processing Concepts and Applications 1st Ed.USA: South Western Publishers.

E-Resources

- *The International Journal of Information and Communication Technology Education (IJICTE)*

3. Principles of Human Nutrition

Purpose

Students will attain knowledge on the basics of interaction of nutrients and metabolic nutrient interactions and disorders related to under and over nutrition.

Expected Learning Outcomes

1. Comprehend the composition and variation of nutrients in foods.
2. Comprehend basic interaction of nutrients and their metabolism.
3. Analyze factors influencing nutrient utilization
4. Prescribe a balanced diet, sources of nutrients and intake regulation
5. Accurately diagnose between under and over nutrition and disorders associated with them.
6. Evaluate weight control and Key contemporary nutritional issues.

Content

Definition of foods and their components; Nutrients in foods: types, function, sources and properties, **nutrient digestion**, absorption and utilization; natural and human-made factors influencing nutrient utilization; **balanced diets and disorders related to under and over nutrition**, **Nutrition in the life cycle:** Nutrition needs for different age groups. Dietary guidelines; non-nutritive components of food; energy metabolism, weight control and contemporary nutrition issues;

Mode of Delivery

Lectures, Tutorials, class discussions, and practical.

Instructional Materials and Equipment

Chalkboard, charts, laptops, textbooks, white board and markers

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Whitney, E. N. and Rolfes, S.R**.** (2011). Understanding Nutrition 12th ed. .Wadsworth: Canada.
2. Eastwood.M (2010). Principles of Human Nutrition, 2nd ed. Blackwell Publishing: New York.
3. Gibney.M.J., Lanham-New. S.A., Cassidy.A., & Vorster, H. H.(2009). Introduction to Human Nutrition, 2nd Ed. New York: Wiley-Blackwell
4. Gibney. M, Vorster,H. H.& Kok, F J. (2002); Introduction to Human Nutrition. Wiley-Blackwell: New York.

Recommended Reference Materials

1. Webb, G.P. (2013). Nutrition: A Health promotion Approach. London: Hodder Arnold.
2. **J**oshi (2002).Nutrition And Dietetics; New York: Tata Mc-Graw Hill
3. Langley-Evans, S. (2013). Nutrition: A Lifespan approach. UK: Wiley- Blackwell.
4. Elizabeth. K. N. (2008) Basics of Foods and Nutrition . Nairobi : Aged, Children and Women Organization :

E-Resources

- *Journal* of *Human Nutrition* and Dietetics

4. Nutrition in the Life Cycle

Purpose

To demonstrate understanding of impact of nutrition on quality of life at the various life stages

Expected Leaming Outcomes

At the end of this course the student should:-

1. Calculate nutrient requirements in the human life cycle
2. Accurately guide on food choices to client seeking services
3. Provide interventions on nutrient related issues affecting each age group in Tanzania Kenya Uganda and world wide
4. Provide interventions during special needs

Content

Concepts of growth and development; nutrient requirements in the human life cycle; infancy, childhood, adolescent, adulthood, old age; **factors affecting food choice in the human life cycle;** nutrient requirements in special physiological states e.g. pregnancy and lactation; **nutrient related issues affecting each age group in population;** WHO guidelines on infant feeding, breastfeeding code; **Nutrition during special needs** (vegetarians, allergies,resource poor setting, alcohol abuse, food intolerance).

Concepts of growth and development; nutrient requirements in the human life cycle; infancy, childhood, adolescent, adulthood, old age; **factors affecting food choice in the human life cycle;** nutrient requirements in special physiological states e.g. pregnancy and lactation; **nutrient related issues affecting each age group in Tanzania, Kenya Uganda and worldwide;** WHO guidelines on infant feeding, breastfeeding code; **Nutrition during special needs** (vegetarians, allergies, resource poor setting, alcohol abuse, food intolerance).

Mode of delivery

Lectures,Tutorials, class discussions, practical and assignments

Instructional materials and equipment

Chalkboard, charts, laptops, textbooks.

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Brown, J.E. (2007) Nutrition through the life cycle. USA: Wardsworth Cengage Learning.
2. Langley-Evans, S. (2013). Nutrition: A Lifespan approach. UK: Wiley- Blackwell.
3. Schlenker, E.D. Peggy P & Cristine, M. T. (2005), Nutrition Throughout The Lifecycle, Crc Press, 0815194277
4. Kumar, V. (2010). Child care & nutrition.New Delhi: Lotus press.
5. Salins, O. (2004). Nutrition guide. 2nd ed. New Delhi: Jaypee Brothers Medical Publishers.
6. Thompson, J & Manore, M (2012). Nutrition for life 3rd ed.USA: Pearson education.
7. Hill, A. G. (2010). Population, Health and Nutrition in the Sahel Issues in the Welfare of Selected West African Communities, London: Routledge.

Recommended Reference Materials

1. Heird, W.C. (2001), Nutritional needs of the six to twelve month old infant 2nd. Edition. New York : Raven Press
2. American Dietetic Association (2008), International Dietetics & Nutrition Terminology (IDNT) Reference Manual: Standardized Language for the Nutrition Care Process
3. Kleinman, R.E. (2003) Pediatric nutrition handbook American Academy of Pediatrics Committee on Nutrition.5th ed Washington, D.C. London : American Academy of Pediatrics , BMJ.

E-Resources

- *International Journal of Life Cycle Assessment (Int J Life Cycle Assess)*
- *The Ceylon Journal of Medical Science 2007; 50:19-21*

5. Nutritional Status Assessments

Purpose

Students will attain knowledge, skills and attitudes on nutritional assessment.

Expected Learning Outcomes

At the end of the course, the students should be able to:

1. Apply the principles of Nutritional assessments
2. Use techniques in nutritional assessments to diagnose conditions
3. Engage accurate, efficient and effective assessment methods relevant to the conditions

Content

Principles of nutritional assessment; Nutritional assessment techniques; anthropometry, biochemical techniques; clinical methods and dietary history; Energy balance procedures used in identifying individuals and groups at risk; and **Planning, implementation, monitoring and evaluation of activities required to institute a successful nutritional intervention programme**. Quality assurance requirements, programme implementation. History, Theoretical frameworks, methods, standards of reference and limitations of the different methods. Criteria for selection of method and determination of appropriateness for different assessment needs. Practical experience in application of the methods.

Mode of Delivery

Lectures,Tutorials, class discussions, practical and assignments, demonstrations.

Instructional Materials and Equipment

Chalkboard, charts, laptops, textbooks, assessment tools

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Nieman, D & Lee, R (2009). Nutrition Assessment 5th ed. New York: McGraw-Hill.
2. Roth, A.R.(2013). Nutrition and diet therapy. USA: Cengage Learning.
3. Roth, A.R. & Townsend, C.F. (2003). Nutrition and Diet Therapy (8th ed). Thompson Delmar Learning. ISBN: 0766835677.
4. FSAU (2005), Nutrition guide to data collection, interpretation analysis and use, FSAU for Somalia
5. Ministry of Health and Sanitation (2008) Guidelines for Nutrition Assessments in Kenya. Kenya National Bureau of Statistics, GoK
6. Uganda Health Systems Assessment 2011
7. Tanzania National Nutrition survey 2014

Recommended Reference Materials

1. Cogill B (2001), Anthropometric indicators measurement guide, FANTA
2. Berdanier, C. D.& Zempleni, J.(2008). Advanced Nutrition Macronutrients, Micronutrients, and Metabolism, Philadelphia: CRC Press.

E-Resources

- *Nutrition Journal 2010, 9:27 doi:10.1186/1475-2891-9-27.*
- *Journal of Parenteral and Enteral Nutrition 1987; 11: 8-13. 2. Duerksen DR, et al.*
- *American Journal of Nursing*

6. Ethics, Integrity and Professional Practice

Purpose

The purpose of this unit is to cultivate ethical awareness, sensitivity and commitment among learners in a manner that will enable them to conduct themselves with integrity in their professional work.

Expected Learning Outcome

1. integrate the concepts of ethics and integrity in the delivery of nutrition and dietetics services
2. Identify the forms, courses and consequences of corruption and the relevant mitigation and prevention mechanisms
3. Implement mainstreaming of integrity and ethics in nutrition and dietetics service delivery
4. Apply constitutional and legal provisions that ground ethics and integrity requirements, institutions and processes,
5. Identify the place of ethics and integrity in individual and national development
6. Apply values that promote integrity
7. Evaluate human conduct using indigenous and contemporary ethical framework

Course Content

Concepts in ethics and integrity; ethics, integrity, professionalism, corruption, and their inter-relationships and applications. **Corruption** Forms, causes and consequences of corruption. **Mainstreaming of integrity and ethics**; corruption risk assessment and management, corruption prevention, planning and implementation of a corruption prevention plan, **Ethics and Integrity;** Ethical reasoning and decision making, ethics auditing in organization; ethics and integrity in research and scholarship. **Constitutional and legal provisions on ethics and integrity.** Ethics and integrity in individual and national development, integrity and human rights, ethical conscience building and national development, case studies on ethics and integrity. **Values that promote; integrity** fairness, selfless, humility, courage and autonomy**. Ethics and integrity in Africa and contemporary contexts.**

Mode of Delivery

Lecture, discussion, community of inquiry; simulation and case study, narration of personal experiences, blended learning

Instructional, Material and Equipment

Books relevant local, regional and international current affairs material, excerpts from speeches, cases and reports, audio-visual-LCD projectors, laptop, computers, internet source, server, online platform

Course Assessment:

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core Reference Materials

1. Anassi, P. (2004). *Corruption in Africa: The Kenyan Experience*. Bloomington, IN: Trafford publishing.
2. Hough, D. (2013). *Corruption, anti-corruption and governance*. New york, NY: Palgrave Macmillan. Further reading material
3. Huberts, L., Maesschalk, K., & Jurkiewics, C. (Eds.). (2008). *Ethics and intergrity of governance: perspectives across frontiers.* Cheltenham, UK: Edward Elgar Publishing Limited

7. Health Nutrition Education & Counseling

Purpose

To apply the theories, skills and methods of health and nutrition education and counseling techniques in health service delivery.

Expected Learning Outcomes

1. Develop objectives for individual and group nutrition interventions for different age levels
2. Use the objectives developed to conduct education and counseling interventions
3. Apply the principles of counseling and counseling process.
4. Demonstrate how counseling and learning theories are applied in clinical and community settings
5. Demonstrate counseling skills and theories as they apply to general health and nutrition counseling.
6. Use principles of education in teaching health and nutrition concepts to various populations.

Content

Theories, skills, and methods in nutrition and health education; **Objectives for nutrition interventions:** considerations - individual, groups, age levels**;** selection of techniques, tools, and resources. **Translation of scientific nutrition literature for the lay public**; verbal and written communication skills**; Principles of counselling**; counselling process; nutrition counseling laboratory; dietary and health counselling; nutrition counselling techniques; designs and implementation of nutrition counselling. **Nutrition Education Messages,** role of a nutrition educator; the problems and potential of nutrition education planning implementation, management of nutrition education programmes. **Communication channels**; Role of stakeholders in nutrition education, nutrition advocacy. Nutrition health education and community mobilization sensitization. Case studies of successful nutrition education programmes.

Mode of Delivery

Lectures, Tutorials, class discussions, practicals and field trips**.**

Instructional Materials and Equipment

Chalkboard, charts, laptops, and textbooks

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Bauer, K.D, Liou, D & Sokolik, C.A (2011). Nutrition Counselling and Education Skill Development. USA: Wardsworth- Cengage Learning.
2. Isobel, R.C (2007). Nutrition Education: Linking Research, Theory and Practice. Canada: Jones & Bartlett Publishers.
3. Stanfield, P.S.(2009). Nutrition and Diet therapy: Self- InstructionalnApproaches. Canada: Jones & Bartlett.
4. Ministry of Health, Government of Kenya (2006). Kenya Guidelines on Nutrition and HIV.
5. Strategic and action plan for the prevention and control of None communicable diseases in Tanzania 2016 -2020
6. Kenya National Diabetes Strategy 2010-2015

Recommended Reference Materials

1. Hammond, K. A. **(**2000). Dietary and clinical assessment in Krause's Food nutrition and diet therapy written by L. Kathleen Mahan, M.S., R.D. and Sylvia Escott-Stump, M.A., R.D., Philadelphia: W.B. Saunders Company.
2. Roth, A.R. & Townsend, C.F. (2003). Nutrition and Diet Therapy (8th ed). USA: Thompson Delmar Learning.

E-Resources

- *Journal of Clinical Nursing.*
- *Journal of Patient Education and Counseling*

8. Nutrition in Disease Management

Purpose

Students will acquire knowledge and skills in nutritional management of diseases.

Expected Learning Outcomes

1. Apply the principles of diet therapy.
2. Modify diets and use in patient care.
3. Use nutrition in preventing and treating diseases.
4. Accurately use different modes of feeding in patient care.
5. Apply the relationship between Medical nutrition therapy and immunity and genetics.

Content

Interrelationships of physiology, biochemistry and nutrition, medical nutritional therapy (MNT); **General nutritional status assessment and diseases/disorders;** malnutrition, obesity; disordered eating, anemia, cardiovascular disease chemical dependency, psychiatric disorder; Drug-nutrients interactions. **Role of nutrition in preventing and treating disease/disorders**: diabetes mellitus, hypoglycemia, renal, biliary, neurological, and dysphagia addresses cancer, upper and lower gastrointestinal(GI) disorder, exocrine pancreas, pulmonary disease, metabolic stress, acquired immune deficiency syndrome(AIDS),rheumatic disorder, transplantation, parenteral and enteral nutrition; **The relationship between MNT and immunity and genetics**.

Mode of Delivery

Lectures, Tutorials and clinical practice.

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Coulston, A.M. & Boushey,C.J (2008). Nutrition in the prevention and treatment of Disease 2nd ed. USA: Academic Press.
2. Tucker, S. (2010). Nutrition and diet therapy for Nurses. USA: Pearson Education.
3. Kabiru, M & Njenga, A. (2010), Health, Nutrition and Care. Nairobi: Nairobi Focus Publishers
4. Springhouse Corporation (2002), Fluids & electrolytes made incredibly easy .2nd Ed. Springhouse, Pa.: Springhouse
5. Saxena (2007), Therapeutic Nutrition,India: Pointer Publishers 817910219X
6. Mason.H.H , Herbert.S.C, Howe.P.E (2007), Nutrition And Clinical Dietetics, Montana America: Kessinger Publishing.
7. Herbert S.C, Howe.P.E, Mason.H.H(2010), Nutrition And Clinical Dietetics, Nabu Press, 1147383588
8. Strategic and action plan for the prevention and control of None communicable diseases in Tanzania 2016 -2020

Recommended Reference Materials

1. Lisa H, Morrison.G (2003), Medical Nutrition & Disease: A Case-Based Approach, New York: Blackwell Publishers, 0632046589
2. Antia, F. P (2009), Clinical Dietetics And Nutrition, New York: Oxford University Press, 0195664159
3. Roberta. D (2000), Nutrition & wellness. New york : McGraw-Hill

E- Resources

- *Journal of the Academy of Nutrition and Dietetics*
- *Journal of Human Nutrition and Dietetics*

9. Basic Health Information Systems Management

Purpose

Enable the learners to accurately collect, record, and retrieve health information in both digitized and hard copy formats and analyze, synthesize and evaluate it to inform nutrition programming.

Expected Learning Outcomes:

1. Apply the concepts, principles and types of management information systems
2. Comprehend the legal and ethical issues in the management of information systems.
3. Use the structural linkages in the management of information systems.
4. Apply the techniques of handling, record keeping retrieving analyzing and dissemination of heath information systems.
5. Design, implement and assess a manual and computerizes management information system.

Course Contents

Management of information systems: Definitions, conce§pts and principles; types, processes of management information systems **Data on Information Systems:** sources, collection and analysis, storage, retrieval, reporting, dissemination, utilization, classification, of information systems, uses of information. **Health and management of Information Systems:** Development of information systems, types of information systems, personnel, financing, facilities and fixed assets, workload operation, designs of information systems, case mix management, information system,

Linkages; various health institutions, inter and intra-agency, community-based data. **Legal and ethical issues:** standards, medical audit, consent, confidentiality.

Organization of Health Information System (HIS). In the Ministry of Health, in other institutions, and in the community. Institutional linkages, among information systems, integrated information systems, Local Area Network (LAN); monitoring and evaluation of health systems. **Computers and Management of Information:** Existing state of health information systems, conceptual and practical aspects in analysis, development, and utilization of computer-based information and control with emphasis on application to health care environment. **Current computer based aids**: Wide Area Network (WAN) and geographical Information systems, information for health service management, range and quality and reliability of health and health service data; assessment of the costs and benefits of information systems, access, security; information personnel and training; systems compatibility and sustainability

Mode of Delivery

Lectures, Tutorials, lab practicals class discussions and assignments

Instructional Materials and Equipment

Chalkboard, charts, laptops, textbooks.

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core Reference Materials

1. Graham, H.T. Bennet Rogers; (1998) *Human Resource Management*; Ninth edition, Great Britain
2. Nnadi, E. (1997) *Handbook on Human Resources Management for Healthcare Professionals*. Washington D.C: Howard University Press
3. Esman, Milton J. (1991) *Management Dimension of Development*. Kumarian Press

Recommended Reference Materials

1. Heidemann, E.G. (1993) *The Contemporary use of Standards in Health Care* -Geneva: WHO
2. Johnstone, P. and Ranken, J. (1994) *Management Support for Primary Health Care: A practical guide to management for health centres and local projects*. Cambridge: FSG Communications Ltd.
3. Reinke, W. A. [ed] (1988) *Health Planning for effective Management*. New York: Oxford University Press

10. Basic Sociology

Purpose

To attain knowledge and skills in sociology of human nutrition.

Expected Learning Outcomes

1. Apply the basic principles of the study of sociology at the health care facility and community level.
2. Use the social structure in front line health care service delivery
3. Relate social sciences to sociology and health care service delivery.
4. Apply basic concepts of anthropology in service delivery

Content

The study of sociology; society methods of sociological study; structure and functions of society; social relationship evolution of human society; social structure; status, role of family group community class value socialization purpose of a social inquiry; **tools in sociology and the social science inquiry**; **relationship between sociology and social sciences**; **basic concepts of anthropology diet and culture**, cultural evolution and change; ethnology and ethnography in the food and nutrition context; field methods in anthropology.

Mode of Delivery

Lectures, Tutorials, Discussions,

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Yuill, C & Barry, A (2008). Understanding the Sociology of Health. London 2nd : Sage Publication
2. McIntyre. L.J. (2002). Practical Skeptic: Reading In Sociology. (2nd ed). New York McGraw-Hill Publishing Company.
3. Phil, B. (2000). Perspectives in Medical Sociology. Waveland Pr. Inc.

Recommended Reference Materials

1. Glanz, K., Rimer, B. K.,& Viswanath, K. (2008). Health Behaviuor and Health Education: Theory, Research, and Practice, 4th edition, California, Jossey-Bass.

E-Resources

- *Sociology journal*
- *American Journal of Sociology*

MODULE 3:
DEGREE LEVEL 1, 2, 3 & 4

Code: Hours: 665 Credit: 36

Module Purpose

This module will enable the learner to develop competencies to provide nutrition services at level three hospitals. This level targets the cadres working at this level that will include, nutritionists (clinical, public health, community, food science), clinical dieticians (clinical dietician, food service diet therapy), nutrition technologists, dieticians technologists, nutrition and dietetics technicians, nurses (degree, higher national diploma, diploma, certificate levels), clinical officers (degree, higher national diploma, diploma levels), clinical assistants, medical officers, public health/environmental health officers, public health/environmental health technicians.

Module Units	Hours
Communication Skills	45
Basic Applications in ICT-	70
Principles of Human Nutrition	70
Nutrition in the Life Cycle	45
Nutritional Status Assessment	70
Ethics and Integrity for Professional Practice	45
Health Education	45
Nutrition in Disease/Conditions Management	70
Basic Health Information Systems Management	70
Basic Sociology	45
Basic Psychology	45
Leadership and Management	45
Total	665

Module Content

1. Communication Skills

Purpose

The purpose of this course is to train students how to communicate effectively in both oral and written communication in the work environment. Students will also be enabled to know how to access information and use it for their study and research or any other intended purpose.

Expected Learning outcomes

1. Apply skills in Behavior change communication
2. Demonstrate and apply study skills note/minute taking and Library skills
3. Demonstrate Reading skills
4. Practice Writing and reporting skills

Course Content

Behavior change communication

Study skills: planning work, organizing and budgeting time and resources, storing and retrieving information, thinking critically, solving problems, coping with task-oriented learning. **Library skills:** Understanding book classification system of Library, collecting and summarizing information, note taking and storage of information. **Reading skills:** skimming, seaming, inference and prediction; intensive and critical reading; discipline-specific reading skills. Interpretation of non-linear text; constructing and using statistical tables, indices, maps, graphs**. Listening skills:** active listening, understanding lectures; , recognizing change of topic, following tutorial discussions, understanding instructions; interpreting information. Administration communications (Memos, letters, email etc). **Examination skills:** understanding examination, preparing and writing examinations; Community dialogue.

Mode of Delivery

Lectures, Tutorials and practical

Instructional Materials and Equipment

Chalkboard, charts, laptops, textbooks

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core Reference Materials

1. Becker, E. F. &Wortmann, J. (2009). Mastering Communication at Work: How to Lead, Manage, and Influence, Philadelphia. Saunders.
2. Burns, S.(2011).101 Tips for Improving Your Conversation Skills, London, Amazon Digital Services.

Recommended Reference Materials

1. Gibson, J. & Walker, E. (2011).The Art of Active Listening: How to Double Your Communication Skills, New York, Amazon Digital services.
2. Liptak, J. L., Leutenberg, E, Sippola, C. & Brodsky, A. M. (2008). The Communication Skills Workbook , California, Whole Person Associates, Inc
3. McKay, M., Davis, M. & Fanning, P. (2009).Messages: The Communication Skills Book,Third Edition edition Toronto, New Harbinger Publications.
4. Nielsen, J. (2008). Effective Communication Skills, Bloomington, Xlibris Corporation.
5. Young, K. S. & Travis, H. P. (2007).Oral Communication: Skills, Choices, and Consequences, Texas, Waveland Pr Inc.

E-Resources

- http://webcampus.frexelmed.edu/medethex/index.html
- *Journal of the Association for Communication Administration*

2. Basic Applications in ICT

Purpose

To enable students acquire knowledge and skills in the use of computers

Expected Learning Outcomes

1. Recognize the various components of a computer.
2. Operate a computer.
3. Use software relevant to nutrition and dietetics.

Content

Introduction to basic ICT Hardware and Software; ; **Software applications relevant to nutrition and dietetics:** Spreadsheets; Using MS Excel spreadsheet; ODK technique; Using Ms Windows, Access and PowerPoint. **Internet applications:** electronic mail: remote log-in; searching; moving files; the World Wide Web, Internet Explorer; **Special topics:** Procurement of ICT. **Software applications relevant to nutrition and dietetics:** Spreadsheets; Using MS Excel spreadsheet; Using EPI info, Nutri-survey, ENA for SMART other statistical packages.

Mode of Delivery

Lectures, Tutorials, class discussions, practicals and assignments

Instructional Materials and Equipment

Chalkboard, charts, laptops, textbooks.

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Graham.B and Watson. D (2010). IGCSE Information and Communication Technology. UK: London Hodder Education
2. Doyle, S. (2000). Understanding Information & Communication Technology. UK: Stanley Thornes ltd.
3. Thompson, R.L &Cats-Baril, W.L. (2003). Information technology and Management. 2nd ed. New York: McGraw-Hill.
4. Frank.W (2006); Theories of the information society Edition: 3rd ed. New York : Routledge, Online Access:

Recommended Reference Materials

1. Sawyer W.(2001), Using information technology: A Practical introduction to computers New York : McGraw-Hill
2. James F. Clark (2008) Computers and Information Processing Concepts and Applications 1st Ed.USA: South Western Publishers.

E-Resources

- *The International Journal of Information and Communication Technology Education (IJICTE)*

3. Principles of Human Nutrition

Purpose

Students will attain knowledge on the basics of interaction of nutrients and metabolic nutrient interactions and disorders related to under and over nutrition.

Expected Learning Outcomes

1. Comprehend the composition and variation of nutrients in foods.
2. Comprehend basic interaction of nutrients and their metabolism.
3. Analyze factors influencing nutrient utilization
4. Prescribe a balanced diet, sources of nutrients and intake regulation
5. Accurately diagnose between under and over nutrition and disorders associated with them.
6. Evaluate weight control and Key contemporary nutritional issues.

Content

Definition of foods and their components; Nutrients in foods: types, function, sources and properties, **nutrient digestion**, absorption and utilization; natural and human-made factors influencing nutrient utilization; **balanced diets and disorders related to under and over nutrition**, **Nutrition in the life cycle:** Nutrition needs for different age groups. Dietary guidelines; non-nutritive components of food; energy metabolism, weight control and contemporary nutrition issues; contemporary nutrition issues.

Mode of Delivery

Lectures, Tutorials, class discussions, and practical.

Instructional Materials and Equipment

Chalkboard, charts, laptops, textbooks, white board and markers

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Whitney, E. N. and Rolfes, S.R**.** (2011). Understanding Nutrition 12th ed. .Wadsworth: Canada.
2. Eastwood.M (2010). Principles of Human Nutrition, 2nd ed. Blackwell Publishing: New York.
3. Gibney.M.J., Lanham-New. S.A., Cassidy.A., & Vorster, H. H.(2009). Introduction to Human Nutrition, 2nd Ed. New York: Wiley-Blackwell
4. Gibney. M, Vorster,H. H.& Kok, F J. (2002); Introduction to Human Nutrition. Wiley-Blackwell: New York.

Recommended Reference Materials

1. Webb, G.P. (2013). Nutrition: A Health promotion Approach. London: Hodder Arnold.
2. **J**oshi (2002).Nutrition And Dietetics; New York: Tata Mc-Graw Hill
3. Langley-Evans, S. (2013). Nutrition: A Lifespan approach. UK: Wiley- Blackwell.
4. Elizabeth. K. N. (2008) Basics of Foods and Nutrition . Nairobi : Aged, Children and Women Organization.

E-Resources

- *Journal* of *Human Nutrition* and Dietetics

4. Nutrition in the Life Cycle

Purpose

To demonstrate understanding of impact of nutrition on quality of life at the various life stages

Expected Learning Outcomes

At the end of this course the student should:-

1. Calculate nutrient requirements in the human life cycle
2. Accurately guide on food choices to client seeking services
3. Provide interventions on nutrient related issues affecting each age group in Tanzania Kenya Uganda and world wide
4. Provide interventions during special needs

Content

Concepts of growth and development; nutrient requirements in the human life cycle; infancy, childhood, adolescent, adulthood, old age; **factors affecting food choice in the human life cycle;** nutrient requirements in special physiological states e.g. pregnancy and lactation; **nutrient related issues affecting each age group in population;** WHO guidelines on maternal, infant and young child nutrition, breastfeeding code; **Nutrition during special needs** (vegetarians, allergies, resource poor setting, alcohol abuse, food intolerance).

Mode of Delivery

Lectures, Tutorials, class discussions, practical and assignments

Instructional Materials and Equipment

Chalkboard, charts, laptops, textbooks.

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Brown, J.E. (2007) Nutrition through the life cycle. USA: Wardsworth Cengage Learning.
2. Langley-Evans, S. (2013). Nutrition: A Lifespan approach. UK: Wiley- Blackwell.
3. Schlenker, E.D. Peggy P & Cristine, M. T. (2005), Nutrition Throughout The Lifecycle, Crc Press, 0815194277
4. Kumar, V. (2010). Child care & nutrition. New Delhi: Lotus press.
5. Salins, O. (2004). Nutrition guide. 2nd ed. New Delhi: Jaypee Brothers Medical Publishers.
6. Thompson, J & Manore, M (2012). Nutrition for life 3rd ed.USA: Pearson education.
7. Hill, A. G. (2010). Population, Health and Nutrition in the Sahel Issues in the Welfare of Selected West African Communities, London: Routledge.

Recommended Reference Materials

1. Heird, W.C. (2001), Nutritional needs of the six to twelve month old infant 2nd. Edition. New York : Raven Press
2. American Dietetic Association (2008), International Dietetics & Nutrition Terminology (IDNT) Reference Manual: Standardized Language for the Nutrition Care Process
3. Kleinman, R.E. (2003) handbook American5th ed Washington, D.C. London : American Academy of Pediatrics , BMJ.

E-Resources

- *International Journal of Life Cycle Assessment (Int J Life Cycle Assess)*
- *The Ceylon Journal of Medical Science 2007; 50:19-21*

5. Nutritional Status Assessment

Purpose

Students will attain knowledge, skills and attitudes on nutritional assessment.

Expected Learning Outcomes

At the end of the course, the students should be able to:

1. Apply the principles of Nutritional assessments
2. Use techniques in nutritional assessments to diagnose conditions
3. Engage accurate, efficient and effective assessment methods relevant to the conditions

Content

Principles of nutritional status assessment; Nutritional assessment techniques; anthropometry, biochemical techniques; clinical methods and dietary assessment techniques (prospective andretrospective techniques); Energy balance procedures used in identifying individuals and groups at risk; and **Planning, implementation, monitoring and evaluation of activities required to institute a successful nutritional intervention programme**. Criteria for selection of method and determination of appropriateness for different assessment needs, and practical experience in application of the methods.

Mode of Delivery

Lectures,Tutorials, class discussions, practical and assignments, demonstrations.

Practical:

1. Learners pair-up and assess their nutritional status
2. Community/fieldwork visits to survey a nutritional status of 50 randomly chosen members in the community.

Instructional Materials and Equipment

Chalkboard, charts, laptops, textbooks, assessment tools

Instruments and aids required:

1. Digital weighing scales
2. Height boards
3. WHO growth reference charts
4. Nutritional Status Assessment

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Nieman, D & Lee, R (2009). Nutrition Assessment 5th Ed. New York: McGraw-Hill.
2. Roth, A.R.(2013). Nutrition and diet therapy. USA: Cengage Learning.
3. Roth, A.R. & Townsend, C.F. (2003). Nutrition and Diet Therapy (8th ed). Thompson Delmar Learning. ISBN: 0766835677.
4. FSAU (2005), Nutrition guide to data collection, interpretation analysis and use, FSAU for Somalia
5. Ministry of Health and Sanitation (2008) Guidelines for Nutrition Assessments in Kenya. Kenya National Bureau of Statistics, GoK
6. Uganda Health Systems Assessment 2011
7. Tanzania National Nutrition survey 2014

Recommended Reference Materials

1. Cogill B (2001), Anthropometric indicators measurement guide, FANTA
2. Berdanier, C. D.& Zempleni, J.(2008). Advanced Nutrition Macronutrients, Micronutrients, and Metabolism, Philadelphia: CRC Press.

E-Resources

- *Nutrition Journal 2010, 9:27 doi:10.1186/1475-2891-9-27.*
- *Journal of Parenteral and Enteral Nutrition 1987; 11: 8-13. 2. Duerksen DR, et al.*
- *American Journal of Nursing*

6. Ethics, Integrity and Professional Practice

Purpose

The purpose of this unit is to cultivate ethical awareness, sensitivity and commitment among learners in a manner that will enable them to conduct themselves with integrity in their professional work.

Expected Learning Outcome

1. integrate the concepts of ethics and integrity in the delivery of nutrition and dietetics services
2. Identify the forms, courses and consequences of corruption and the relevant mitigation and prevention mechanisms
3. Implement mainstreaming of integrity and ethics in nutrition and dietetics service delivery
4. Apply constitutional and legal provisions that ground ethics and integrity requirements, institutions and processes,
5. Identify the place of ethics and integrity in individual and national development
6. Apply values that promote integrity
7. Evaluate human conduct using indigenous and contemporary ethical framework

Course Content

Theories and Concepts in ethics, integrity and professionalism**;** ethics, integrity, professionalism, corruption, and their inter-relationships and applications; Forms, causes and consequences of ethical malpractices. **Ethics and Integrity;** Ethical reasoning and decision making. **Constitutional and legal provisions on ethics and integrity.** Ethics and integrity in individual and national development, integrity and human rights, ethical conscience building and national development, case studies on ethics and integrity. **Values that promote; integrity** fairness, selfless, humility, courage and autonomy**. Ethics and integrity in Africa and contemporary contexts.**

Mode of Delivery

Lecture, discussion, community of inquiry, socratic questioning; simulation and case study, narration of personal experiences, blended learning

Instructional, Material and Equipment

Books relevant local, regional and international current affairs material, excerpts from speeches, cases and reports, audio-visual-LCD projectors, laptop, computers, internet source, server, online platform

Course Assessment:

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	40%
End of Semester Examination	60%
Total marks	100%
Pass Mark	50%

Core Reference Materials

1. Anassi, P. (2004). *Corruption in Africa: The Kenyan Experience*. Bloomington, IN: Trafford publishing.
2. Hough, D. (2013). *Corruption, anti-corruption and governance*. New york, NY: Palgrave Macmillan. Further reading material
3. Huberts, L., Maesschalk, K., & Jurkiewics, C. (Eds.). (2008). *Ethics and intergrity of governance: perspectives across frontiers.* Cheltenham, UK: Edward Elgar Publishing Limited

Nutrition and Health Education

Purpose

To apply the theories, skills and methods of health and nutrition education and counseling techniques in health service delivery.

Expected Learning Outcomes

1. Develop objectives for individual and group nutrition interventions for different age levels
2. Use the objectives developed to conduct education and counseling interventions
3. Apply the principles of counseling and counseling process.
4. Demonstrate how counseling and learning theories are applied in clinical and community settings
5. Demonstrate counseling skills and theories as they apply to general health and nutrition counseling.
6. Use principles of education in teaching health and nutrition concepts to various populations.

Content

Theories, skills, and methods in nutrition and health education; **Objectives for nutrition interventions:** considerations - individual, groups, age levels**;** selection of techniques, tools, and resources. **Translation and communication of nutrition information for the lay public**; verbal and written communication skills**; Nutrition Education Message development,** role of a nutrition educator; **Communication processes and channels**; Targeted nutrition advocacy. Community mobilization and sensitization.

Mode of Delivery

Lectures, Tutorials, class discussions, practicals and field trips**.**

Instructional Materials and Equipment

Chalkboard, charts, laptops, and textbooks

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Bauer, K.D, Liou, D &Sokolik, C.A (2011). Nutrition Counselling and Education Skill Development. USA: Wardsworth- Cengage Learning.
2. Isobel, R.C (2007). Nutrition Education: Linking Research, Theory and Practice. Canada: Jones & Bartlett Publishers.
3. Stanfield, P.S.(2009). Nutrition and Diet therapy: Self- InstructionalnApproaches. Canada: Jones & Bartlett.
4. Ministry of Health, Government of Kenya (2006). Kenya Guidelines on Nutrition and HIV.
5. Kenya National Diabetes Strategy 2010-2015

Recommended Reference Materials

1. Hammond, K. A. **(**2000). Dietary and clinical assessment in Krause's Food nutrition and diet therapy written by L. Kathleen Mahan, M.S., R.D. and Sylvia Escott-Stump, M.A., R.D., Philadelphia: W.B. Saunders Company.
2. Roth, A.R. & Townsend, C.F. (2003). Nutrition and Diet Therapy (8th ed). USA: Thompson Delmar Learning.

E-Resources

- *Journal of Clinical Nursing.*
- *Journal of Patient Education and Counseling*

7. Nutrition in Disease Management

Purpose

Students will acquire knowledge and skills in nutritional management of diseases.

Expected Learning Outcomes

1. Apply the principles of diet therapy.
2. Modify diets and use in patient care.
3. Use nutrition in preventing and treating diseases.
4. Accurately use different modes of feeding in patient care.
5. Apply the relationship between Medical nutrition therapy and immunity and genetics.

Content

Understanding the **general nutritional status assessment, deficiencies, diseases disorders (endocrine and metabolic diseases, cardiovascular and infectious diseases ;** Types and causes of malnutrition,; Eating disorders, Parenteral and enteral nutrition.

Mode of Delivery

Lectures, Tutorials and clinical practice.

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Coulston, A.M. & Boushey,C.J (2008). Nutrition in the prevention and treatment of Disease 2nd ed. USA: Academic Press.
2. Tucker, S. (2010). Nutrition and diet therapy for Nurses. USA: Pearson Education.
3. Kabiru, M & Njenga, A. (2010), Health, Nutrition and Care. Nairobi: Nairobi Focus Publishers
4. Springhouse Corporation (2002), Fluids & electrolytes made incredibly easy .2nd Ed. Springhouse, Pa.: Springhouse
5. Saxena (2007), Therapeutic Nutrition,India: Pointer Publishers 817910219X
6. Mason.H.H , Herbert.S.C, Howe.P.E (2007), Nutrition And Clinical Dietetics, Montana America: Kessinger Publishing.
7. Strategic and action plan for the prevention and control of None communicable diseases in Tanzania 2016 -2020
8. Herbert S.C, Howe.P.E, Mason.H.H(2010), Nutrition And Clinical Dietetics, Nabu Press, 1147383588

Recommended Reference Materials

1. Lisa H, Morrison.G (2003), Medical Nutrition & Disease: A Case-Based Approach, New York: Blackwell Publishers, 0632046589
2. Antia, F. P (2009), Clinical Dietetics And Nutrition, New York: Oxford University Press, 0195664159
3. Roberta. D (2000), Nutrition & wellness. New York : McGraw-Hill

E- Resources

- *Journal of the Academy of Nutrition and Dietetics*
- *Journal of Human Nutrition and Dietetics*

8. Basic Health Information Systems Management

Purpose:

Enable the learners to accurately collect, record, and retrieve health information in both digitized and hard copy formats and analyze, synthesize and evaluate it to inform nutrition programming.

Expected Learning Out comes:

1. Apply the concepts, principles and types of management information systems
2. Comprehend the legal and ethical issues in the management of information systems.
3. Use the structural linkages in the management of information systems.
4. Apply the techniques of handling, record keeping retrieving analyzing and dissemination of heath information systems.
5. Design, implement and assess a manual and computerizes management information system.

Course Content

Management of information systems: Definitions, concepts and principles; types, processes of management information systems

Data on Information Systems: sources, collection and analysis, storage, retrieval, reporting, dissemination, utilization, classification, of information systems, uses of information.

Health and management of Information Systems: Development of information systems, types of information systems, personnel, financing, facilities and fixed assets, workload operation, designs of information systems, case mix management, information system,

Linkages; various health institutions, inter and intra-agency, community-based data.

Legal and ethical issues: standards, medical audit, consent, confidentiality.

Organization of Health Information System (HIS). In the Ministry of Health, in other institutions, and in the community. Institutional linkages, among information systems, integrated information systems, Local Area Network (LAN); monitoring and evaluation of health systems.

Computers and Management of Information: Existing state of health information systems, conceptual and practical aspects in analysis, development, and utilization of computer-based information and control with emphasis on application to health care environment.

Current computer based aids: Wide Area Network (WAN) and geographical

Information systems, information for health service management, range and quality and reliability of health and health service data; assessment of the costs and benefits of information systems, access, security; information personnel and training; systems compatibility and sustainability

Mode of Delivery

Lectures, Tutorials, lab practicals class discussions and assignments

Instructional Materials and Equipment

Chalkboard, charts, laptops, textbooks.

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core Reference Materials

1. Graham, H.T.; Bennet Rogers; (1998) *Human Resource Management*; Ninth edition, Great Britain
2. Nnadi, E. (1997) *Handbook on Human Resources Management for Healthcare Professionals*. Washington D.C: Howard University Press
3. Esman, Milton J. (1991) *Management Dimension of Development*. Kumarian Press

Recommended Reference Materials

1. Heidemann, E.G. (1993) *The Contemporary use of Standards in Health Care* -Geneva: WHO

2. Johnstone, P. and Ranken, J. (1994) *Management Support for Primary Health Care: A practical guide to management for health centres and local projects*. Cambridge: FSG Communications Ltd.

3. Reinke, W. A. [ed] (1988) *Health Planning for effective Management*. New York: Oxford University Press

9. Basic Sociology

Purpose

To attain knowledge and skills in sociology of human nutrition.

Expected Learning Outcomes

1. Apply the basic principles of the study of sociology at the health care facility and community level.
2. Use the social structure in front line health care service delivery
3. Relate social sciences to sociology and health care service delivery.
4. Apply basic concepts of anthropology in service delivery

Content

The study of sociology; society methods of sociological study; structure and functions of society; social relationship evolution of human society; social structure; status, role of family group community class value socialization purpose of a social inquiry; **tools in sociology and the social science inquiry**; **relationship between sociology and social sciences**; **basic concepts of anthropology diet and culture**, cultural evolution and change; ethnology and ethnography in the food and nutrition context; field methods in anthropology.

Mode of Delivery

Lectures, Tutorials, Discussions,

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Yuill, C & Barry, A (2008). Understanding the Sociology of Health. London 2nd : Sage Publication
2. McIntyre. L.J. (2002). Practical Skeptic: Reading In Sociology. (2nd ed). New York McGraw-Hill Publishing Company.
3. Phil, B. (2000). Perspectives in Medical Sociology. Waveland Pr. Inc.

Recommended Reference Materials

1. Glanz, K., Rimer, B. K.,& Viswanath, K. (2008). Health Behaviuor and Health Education: Theory, Research, and Practice, 4th edition, California, Jossey-Bass.

E-Resources

- *Sociology journal*
- *American Journal of Sociology*

10. Basic Psychology

Purpose

Students will attain basic knowledge and skills in psychology

Expected Learning Outcomes

At the end of the course, the students should be able to:

1. Apply the basic principles of human psychology
2. Use the personality theories, structure and disorder in frontline healthcare service provision.
3. Utilize the evolution of behavior and consciousness within the service provision environment and in daily life.
4. Diagnose and manage the various disorders associated with behavior e.g. psychological, anxiety etc.

Content

Basic principles of human psychology, **psychosexual development stages**, **social development:theories of personality**; **personality structure**; **personality disorders;evolution of behavior and consciousness**; **learning and motivation perception and attention**; thinking and decision making; abnormal behavior: **behaviorisms;** classical conditioning; operant conditioning; **psychoanalytic factors and health**; **psychological disorders**; anxiety disorders; dissociative and somatoform disorders; mood disorders; schizophrenia and personality disorders.

Mode of Delivery

Lectures, Tutorials, class discussions and assignments

Instructional Materials and Equipment

Chalkboard, charts, laptops, textbooks.

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Cross, R. (2010). Psychology. 6th ed. UK: Hodder Education.
2. Murthy, M.R (2005). Psychology of learning. India: Aavishkar Publishers.
3. Feldman, R.D., Olds, W.S. & Papalia, D.E (2011). Human Development 9th ed.New York: Tata McGraw-Hill.
4. Camille, B.W., Elizabeth, F.L Charles, A.W (1998). Psychology 5th ed., New York: McGraw Hill , 0-07-071931-4

Recommended Reference Materials

1. Glanz, K., Rimer, B. K.,& Viswanath, K. (2008). Health Behaviuor and Health Education: Theory, Research, and Practice, 4th edition, California, Jossey-Bass.
2. Coon, D & Mittere, J.O (2012). Introduction to Psychology 13th Ed, USA: Cengage Learning

E- Resources

- *Clinical psychology review journal*

11. Leadership and Management

Purpose

To enable the learner to understand leadership skills, styles and ethics related to leadership and professional practice.

Expected Learning Outcomes

By the end of this course the student should:-

1. Demonstrate the types of leadership styles
2. Apply the competencies and qualities of effective leaders.
3. Comprehend the functions of a leader.
4. Apply the situational and behavioral approaches to leadership and management
5. Demonstrate philosophy and ethics related to leadership

Content

Leadership skills and styles; types leadership; philosophy and ethics related to leadership and professional practice; leadership traits; effective leadership: **competencies and qualities of effective leaders**; functions of a leader; behavioral, and situational approaches to leadership; **management and leadership;** alternative leadership styles; action-centered leadership; vision and work life of leaders; leaders and decision-making. **Professional competencies needed for career entry and advancement in nutrition and dietetics**; an overview of appropriate means of delivery of professional services for a variety of needs; professional behavior: **ethics, academic integrity and principles of professional practice**; successful professionals: qualities and characteristics.

Mode of Delivery

Lectures, Tutorials, class discussions and assignments

Instructional Materials and Equipment

Chalkboard, charts, laptops, textbooks.

Course Assessment

Continuous Course Assessment Tests (CATs) and Assignments/Term paper/Practical	30%
End of Semester Examination	70%
Total marks	100%
Pass Mark	50%

Core References Materials

1. Martin. J and Beckett. C.O (2007). Managing Child Nutrition Programs: Leadership for Excellence.
2. Schumacher.D & Allen Queen. J (2006) Overcoming Obesity in Childhood and Adolescence: A Guide for School Leaders

Recommended Reference Materials

1. O'Connor. H, Brand-Miller. J, Colagiuri. S & Foster-Powell. K. (2004) Nutri. & Diet
2. The New Glucose Revolution Pocket Guide to Peak Performance
3. Swansburg. R. C and Swansburg. R. J (2008) Introductory Management and Leadership for Nurses: An Interactive Text (The Jones and Bartlett Series in Nursing.

E-Resources

- *The Journal of the Academy of Nutrition and Dietetics*
- *The Journal of the American Dietetic Association.*

Core Reference Materials

1. Management Theory and Practice Houston, S. & Bove, L. A. (2010). Project Management for Healthcare Informatics (Health Informatics), New York, Springer.
2. Kathleen M. L., Shirley E.M. (2009). Health Information Management: Concepts, Principles, and Practice, Third Edition. Ahima Publishers. ISBN 10: 1584262176
3. Dwyer, J., Stanton, P. & Thiessen V. (2004). Project Management in Health and Community Services, London, Routledge.

Recommended Reference Materials

1. Community Health by C.G Wood Vangan and Glauvilte (AMREF)
2. Novick, L.F., Morrow, C.B., & Mays, G.P. (2007). Public Health Administration:
3. Principles for Population-based Management; California, Jones and Bartlett Publishers Schwalbe, K. (2011). Revised:
4. An introduction to Project Management; 3rd Edition, New York, Kathy Schwalbe LLC. Shirley, D. (2011).
5. Project Management for Healthcare (ESI International Project Management Series), New York, CRS Press.

7.0 REFERENCES

1. http://www.ecsahc.org/ecsa-health-community-convenes-a-regional-planning-meeting-for-africa-technical-capacity-for-nutrition-project/
2. http://www.undp.org/content/undp/en/home/sdgoverview/post-2015-development-agenda/goal-2.html
3. Ministry of Health (2014) Kenya Nutrition Capacity Development Framework, 2014 – 2019. Government of Kenya. Nairobi
4. Tanzania Food and Nutrition Centre (2012) Tanzania assessment for scaling up nutrition. Government of Tanzania. Dodoma
5. UNICEF (2014) Strengthening the Human Resource Base for Nutrition in East and Southern Africa Region.

APPENDICES

Appendix 1

Facilities and Equipment

- Lecture rooms
- Libraries
- Workshops
- Laboratories (food preparation labs, relevant equipment and
- Supplies, counseling labs)
- Demonstration farms
- Information and Communication Technology labs
- Health care Skills laboratory
- Practicum and attachment sites

Appendix 2

1. Roth, A.R. & Townsend, C.F. (2003). Nutrition and Diet Therapy (8th ed). Thompson Delmar Learning. ISBN: 0766835677
2. Guthrie, Helen, Andrews, (1986.) "Introductory Nutrition" 6th Ed, St. Louis, Times Mirror/Mosby College
3. Mudambi S.R., M.V. Rajagopal (1990) "Fundamentals of Food and Nutrition", 2nd Ed. Wiley Eastern Ltd
4. Swaminathan, M.(1985) "Advanced Textbook of Foods and Nutrition", Vol I,II (2nd Ed.revised) Bappco, Bangalore,
5. Wilson, EVAD(1979)"Principles of Nutrition", 4th Ed. New York, John Wiley & Sons,
6. Swaminathan, M (1998), "Principles of Nutrition and Dietetics", Bappco, Bangalore.
7. Bogert, J.G.V, Briggs, D.H. Calloway. (1985) "Nutrition and Physical Fitness", 11th Ed. W.B. Saunders & Co, Philadelphia.
8. Wardlaw, G.M. Insel (PH1990) "Perspectives in Nutrition". Times Mirror/Mosby College Publishing Co., St.Louis.
9. William. (1985) "Nutrition and Diet Therapy", 5th Ed. Mosby Co, St. Louis.
10. West, E.S. Todd, W.R. Moses, R.S. and Van Bruggan, J.B. 1968, "Textbook of Biochemistry", the Macmillan Company, New York.
11. Conn, E.E. and Stump, P.K. (1981) "Outlines of Biochemistry", Wiley Eastern Private Ltd., New Delhi.
12. Varey. (1969)"Practical Clinical Bio-chemistry", William Heinemann Medical Book, London Ltd., Interscience Books Inc. New York.
13. Maurice E. Shils, James A. Olson, Mosbe, Strike. (1994) "Modern Nutrition in Health and Diseases", 8th Ed., Volume I and II. Lea & Febiger, Philadelphia, A. Waverly Company.

IMPORTANT REFERENCE MATERIAL

Book Title	Year of publication	Author
Nutrition: An Applied Approach (3rd Edition)	2011	Janice Thompson and Melinda Manore
Nutrition	2010	Paul Insel, Don Ross, Kimberley Editors: McMahon and Melissa Bernstein
Introduction to Human Nutrition (The Nutrition Society Textbook)	2002	Michael J. Gibney, Hester H. Vorster and Frans J. Kok
Understanding Nutrition	2010	Eleanor Noss Whitney and Sharon Rady Rolfes
Nutrition: Concepts and Controversies	2013	Frances Sizer and Ellie Whitney
Introduction to Human Nutrition by	2009	Michael J. Gibney, Susan A. Lanham-New, Aedin Cassidy and Hester H. Vorster
Introduction to Human Nutrition (The Nutrition Society Textbook)	2013	Michael J. Gibney, Susan A. Lanham-New, Aedin Cassidy and Hester H. Vorster
Nutrition: Concepts and Controversies, 12th Edition	2010	Frances Sienkiewicz Sizer and Ellie Whitney
Nutrition: Concepts and Controversies, MyPlate	2011	Frances Sizer and Ellie Whitney
Understanding Nutrition	2012	Eleanor Noss Whitney and Sharon Rady Rolfes
Nutrition: Science and Applications	2013	Lori A. Smolin and Mary B. Grosvenor
Contemporary Nutrition	2010	Gordon M Wardlaw
Nutrition For Healthy Living	2012	Wendy Schiff
Nutrition for Foodservice and Culinary Professionals	2009	Karen Eich Drummond and Lisa M. Brefere
Nutrition for Life (2nd Edition)	2009	Janice Thompson and Melinda Manore
Staying Healthy with Nutrition, rev: The Complete Guide to Diet and Nutritional Medicine	2006	Elson M. Haas and Buck Levin
Contemporary Nutrition	2010	Gordon Wardlaw and Anne Smith

IMPORTANT REFERENCE MATERIAL

Book Title	Year of publication	Author
Discovering Nutrition	2012	Paul Insel, Don Ross, Kimberley McMahon and Melissa Bernstein
Understanding Normal and Clinical Nutrition	2008	Sharon Rady Rolfes, Kathryn Pinna and Ellie Whitney
The Art of Fermentation: An In-Depth Exploration of Essential Concepts and Processes from around the World	2012	Sandor Ellix Katz and Michael Pollan
Nutrition for Foodservice and Culinary Professionals	2013	Karen E. Drummond and Lisa M. Brefere
The Science of Nutrition (2nd Edition	2010	Janice Thompson, Melinda Manore and Linda Vaughan
Nutrition: An Applied Approach	2005	Pearson Pub
Nutrition For Dummies	2011	Carol Ann Rinzler
Williams' Basic Nutrition & Diet Therapy,	2012	14e by Staci Nix
Contemporary Nutrition	2012	Gordon Wardlaw and Anne Smith
Wardlaw's Perspectives in Nutrition	2012	Carol Byrd-Bredbenner, Gaile Moe, Donna Beshgetoor and Jacqueline Berning
Advanced Nutrition and Human Metabolism	2008	Sareen S. Gropper and Jack L. Smith
Krause's Food & the Nutrition Care Process, 13e (Food, Nutrition & Diet Therapy	2011	L. Kathleen Mahan , Janice L Raymond and Sylvia Escott-Stump
Nutrition Therapy and Pathophysiology	2010	Marcia Nelms, Kathryn P. Sucher, Karen Lacey and Sara Long Roth
Nutrition: A Lifespan Approach	2013	Simon Langley-Evans
Wardlaw's Perspectives in Nutrition	2008	Carol Byrd-Bredbenner, Jacqueline Berning, Donna Beshgetoor and Gaile Moe
Community Nutrition in Action: An Entrepreneurial Approach, 6th Edition		Cengage
Nutrition & Diet Therapy	2010	Ruth A. Roth
Advanced Nutrition and Human Metabolism	2012	Sareen S. Gropper and Jack L. Smith

IMPORTANT REFERENCE MATERIAL

Book Title	Year of publication	Author
Sports and Exercise Nutrition	2012	William D. McArdle BS , Frank I. Katch and Victor L. Katch
Public Health Nutrition	2004	Michael J. Gibney, Barrie M. Margetts, John M. Kearney and Lenore Arab
Clinical Nutrition (The Nutrition Society Textbook)	2013	Marinos Elia, Olle Ljungqvist, Rebecca Stratton and Susan A. Lanham-New
Whole: Rethinking the Science of Nutrition	2013	T. Colin Campbell and Howard Jacobson
Nutrition for Life (3rd Edition)	2012	Janice Thompson and Melinda Manore
Nutrition for Health, Fitness & Sport	2009	Melvin Williams
Nutrition Through the Life Cycle	2007	Judith E.(Judith E. Brown) Brown
Nutrition for Health, Fitness & Sport	2012	Melvin Williams, Dawn Anderson and Eric Rawson
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Williams' Basic Nutrition & Diet Therapy	2008	Staci Nix
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Nutrition And Diet Therapy: Self-Instructional Approaches	2009	Peggy S. Stanfield (2009)
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The Encyclopedia of Natural Medicine Third Edition	2012	Michael T. Murray M.D. and Joseph Pizzorno
Nutrition Therapy: Advanced Counseling Skills	2007	Kathy King and Bridget Klawitter
The Vitamins: Fundamental aspects in nutrition and health	2007	Gerald F. Combs Jr.
Medical Nutrition Therapy: A Case Study Approach	2013	Marcia Nelms and Sara Long Roth
Advanced Human Nutrition	2011	Denis M Medeiros and Robert E.C. Wildman
Textbook of Obesity: Biological, Psychological and Cultural Influences	2012	Sharon Akabas, Sally Ann Lederman and Barbara J. Moore
Essentials of Human Nutrition	2012	Jim Mann and Stewart Truswell
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