KENYA MEDICAL TRAINING COLLEGE

Faculty of Clinical Sciences

Department of Clinical Medicine – Embu

2016/2017 Academic Year

COURSE OUTLINES

Program: Basic Diploma in Clinical Medicine & Surgery

Curriculum 2014

Level: I

January 2017

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Teaching Methods

- Assignments
- Bed side teaching
- Brain storming
- Case studies
- Lecture
- Plenary discussion
- Self-directed learning
- Simulation and skills lab
- Small Group facilitation
- Term papers
- Tutorials

Learning Material/Facilities

- Electronic learning materials
- Flip charts/ white boards/ black boards
- Handouts
- Learning guides and instructional/ procedure manuals
- Skills lab
- Text books
- Tutorials demonstrations
- Video cassettes/ LCD

Assessment

	Weight	Modes and Test items	Period of administration
CAT	40%	Sit-in, Assignments, term papers, case studies	1st CAT by 5th Week 2nd ACT by 8th Week
Exam	60%	Short essay Qs, Long essay Qs, Multiple choice Qs, Multiple true-false Qs, Extended matching Qs, OSCE, clinical/practicum	February and July
Total	100%	A ≥ 75%; B = 65 – 74%; C = 50 – 64%; D = 40 – 49%; F ≤ 39%	

SEMESTER 1 (Y1S1)

MODULES

Module 1: Human Psychology

Module No: 1 **Code:** HCS 1208 **Hours:** 30 **Credit Factor:** 3

Module Competence: The module is designed to enable the learners manage any emergency situation calmly and efficiently using first aid skills

Course Outline

Unit	Week No	Lecture No	Content
Introduction to Psychology (4 hours)	1-2	1 – 2	Historical background, foundations of psychology, goals of psychology, schools of thought, contemporary approaches, methods used in studying psychology, branches, relevance of psychology in health care practice
Human Growth and Development (8 hours)	3 – 6	3 - 6	Factors influencing human growth and development, stages of human development, prenatal development, neonatal development, childhood, puberty, adolescence, adulthood, old age, aging, death and dying
Cognitive Psychology (5 hours)	7 – 9	7 – 9	Learning, memory, thinking, language and intelligence
Motivation and Emotions (5 hours)	9 – 11	9 – 11	Motivation – types, theories, types of motives; Emotions – physiology, chemistry, theories, expression and experience.
Personality (8 hours)	12 - 15	12 - 15	Types, theories of personality development

References

1) Chance, P. (2013). Learning and Behaviour. Belmont, CA: Wadsworth, Cengage Learning
2) Davey, G. (2008). Complete Psychology, 2nd edition. London, UK: Hodder & Stoughton
3) Kasschau, R. A. (2003). Understanding Psychology. Glencoe: McGraw-Hill
4) Sdorow. L. M. (2005). Psychology, 6th Edition. Belmont, CA: Wadsworth, Cengage Learning
5) Snatrock, J. W. (2009). Lifespan Development, 12th edition. Boston: McGraw Hiher Education

Module 2: Communication Skills

Module No: 2 **Code:** HCS 1102 **Hours:** 30 **Credit Factor:** 3

Module Competence: The module is designed to equip the learner with knowledge, skills, concepts and principles of communication to enable them communicate effectively in their respective profession

Course Outline

Unit	Week No	Lecture No	Content
Introduction to Communication (4 hours)	1 – 2		Communication, theories, models, elements, stages, processes and importance; one way -two-way communication – advantages,

Unit	Week No	Lecture No	Content
			disadvantages, effective communication, characteristics, advantages and barriers to effective communication
Modes of Communication (10 hours)	3 – 6		Intrapersonal, interpersonal and mass communication Types of communication – oral, verbal characteristics, verbal, written, interview, public speaking, elements of non-verbal communication, importance of non-verbal communication
Patterns of Communication (6 hours)	7 – 9		Patterns, direction of communication, strategies to improving communication
Listening skills (4 hours)	10 – 11		Listening steps, levels of listening, barriers to effective listening, improving listening skills
Reading and writing skills (6 hours)	12 - 15		Introduction to reading, reading techniques and strategies, critical reading and presentation

References

1) Gopal, N. (2009). Business Communication. New Delhi:New Age International Publishers
2) Sillars, S. (2001). Success in Communication. London: John Murray

Module 3: Computer Applications

Module No: 3 **Code:** HCS 1103 **Hours:** 60 (T – 45; P – 15) **Credit Factor:** 6

Module Competence: The module is designed to equip the learner with knowledge and skills in utilization of computer application in health care services

Course Outline

Unit	Week No	Lecture No	Content
Introduction to computers (12 hours)			Definition, Types of computers, terminology trends, hardware, software, ogre ware, input, output, storage devices, data processing techniques; ergonomics – sitting, posture, types of chairs, distance and level from the device, health hazards and ethics
Application software (36 hours)			Microsoft word, Excel, PowerPoint
Security (2 hours)			Physical security, virus , worms and Trojans, backup and firewall
Internet (6 hours)			Networks. World wide web (www), browsers, browsing, searches and internet service
Basic computer maintenance (4 hours)			

References

1) Chris, L. and Steward, W. (2010). Computer Studies and Information Technology. Cambridge: Cambridge University Press

2) Greg, H. (2013). Excell 2013 for Dummies. Hoboken, H. J: John Wiley & Sons
3) Macbridge, P. K. (2011). Information Technology: Foundation Level. Cambridge: Cambridge University Press
4) Torben, L. F. (2010). Introduction to Microsoft Office Word. The Mouse Training Company Book Boon Publisher

Module 4: HIV, AIDS & STI

Module No: 4 **Code:** HCS 1104 **Hours:** 30 **Credit Factor:** 3

Module Competence: The module is designed to equip the learner with the knowledge, skills and attitudes to enable them effectively contribute to the national HIV response

Course Outline

Unit	Week No	Lecture No	Content
Fundamentals of HIV and AIDS (8 hours)			Definition of terms, history, aetiology of HIV, transmission, HIV types and subtypes, risk factors, most at risk populations (MARPs), myths and misconceptions, opportunistic infections
Prevention of HIV and AIDS (4 hours)			ABC, voluntary medical male circumcision (VMMC), drugs, post exposure prophylaxis and elimination of mother to child transmission (eMTCT)
Management of HIV and AIDS (4 hours)			Antiretroviral therapy (AT); drugs, nutrition. Psychological counselling and testing
SBCC - Strategic Behaviour Change Communication(4 hrs)			Concept of SBCC, Goals, Guiding principles. Framework for SBCC design, challenges of communication
Home & Community Based Care (HCBC) (4 hours)			Definition, concept of HCBC and objectives, rationale, role of various stake holders, components, clinical care, nursing care, psycho-spiritual and social support, palliative care. Community mobilization
STIs (6 hours)			Definition, classification, association between HIV/AIDS and STI, syndromic management of STIs

References

1) Ministry of Health (20120. National EMTCT Communication Strategy: For the Elimination of Mother to Child Transmission of HIV and Keeping Mothers Alive 22012 – 2015. Nairobi: NASCOP
2) NACC (2009). The Kenya National HIV Strategic Plan, 2009/10 -2012/13: Delivering on Universal Access to Services. Nairobi: NACC
3) National AIDS/STD Control Programme. Algorithms for Managing Common STI Syndromes. Nairobi: NASCOP

Module 5: Human Anatomy I

Module No: 5 **Code:** HCS 1107 **Hours:** 60 **Credit Factor:** 6

Module Competence: The module is designed to equip the leaners with knowledge to understand the human body structure to apply in diagnosis and management of disease

Course Outline

Unit	Week No	Lecture No	Content
Introduction (6 hours)			**De**finitions of anatomical terminologies; distinction between histology and physiology, Historical background; scope
The Cell (6 hours)			Cycle, types and structure
Embryology (8 hours)			Embryogenesis and organogenesis
Tissues (14 hours)			Classification, Epithelial tissues, Connective tissues, muscle and nervous tissues
The Body Cavities (4 hours)			Cranial, thoracic, abdominal and pelvic cavities
Body Systems 1(22 hours)			**Cardiovascular system**: - the heart, blood vessels. **Lymphatic system**: - location and structure of lymphatic tissues **Nervous system**: Organization, types and distribution, sensory and motor pathways, meninges and ventricles, distribution of the cranial nerves. Blood supply to the brain and spinal cord. Endocrine System: - location and structure of the endocrine glands, blood ad nerve supply.

References

1) Drake, R. L., Vogl, W. A. and Mitchell, A.W.M. (2005). Gray's Anatomy for Students. Toronto, Ontario, Canada: Elsevier Churchill Livingstone
2) Langman, J. and Sadler, T. W. (2004). Langman's Medical Embrology, 9th Edition, Baltimore: Lippincott Williams & Wilkins
3) Netter, F. H. (2010). Atlas of Anatomy. 5TH Edition. Philadelphia: Saunders Elsevier
4) Rice. J. (2004). Medical Terminology with Human Anatomy. 5th Edition, New Jersey: Prentice Hall Inc.
5) Romanes, G. J. (2000). Cunningham's Manual of Practical Anatomy: Volume I – Upper and Lower Limbs, 15th Edition, Oxford: Oxford University Press

Module 6: Human Physiology I

Module No: 6 **Code:** HCS 1106 **Hours:** 60 **Credit Factor:** 6

Module Competence: The module is designed to equip the leaners with knowledge to understand the human body function to apply in diagnosis and management of disease

Course Outline

Unit	Week No	Lecture No	Content
Introduction and Cell Biology (10 hours)	**1 – 3**		Functional organization of the human body; Homeostasis and Homeostatic control mechanisms; Chemical Basis of life; The Cell: - Structure and Function; cell reproduction; Cell membrane and transport systems; Passive and active transport; Osmosis, Diffusion, Carrier-mediated transport; Membrane potentials and action potentials; homeostasis;

Unit	Week No	Lecture No	Content
			Body tissues: - Composition and function; Epithelial tissues; Skin and its appendages; Skeletal tissues;
Body Fluid Compartments (10 hours)	**3 – 5**		Composition of body fluids, regulation of fluid and electrolyte, water balance, regulation of temperature, role of hypothalamus, terms used in fluid movement – diffusion, osmosis, hydrostatic pressure, colloid osmotic pressure, units of measuring concentration of solutes
Blood and Lymphatic System (10 hours)	**6 - 8**		Composition of blood, haemopoeisis, normal blood cell counts, factors that affect blood volume, hemoglobin – structure and function, leucocytes, - classification and functions, platelets, bod typing, Lymphatic system: - Lymph and lymph capillaries; Lymph ducts; Lymph nodes; Lymphoid organs – spleen, thymus, and tonsils: Lymphatic drainage Reticuloendothelial function.
Cardiovascular System (14 hours)	**8 - 11**		The heart: - Functional characteristics of the heart muscle; The heart as a pump; the cardiac cycle, Heart valves and heart sounds; Electrical activity of the heart; ECG; Regulation of heart function; Haemodynamic: Blood flow; Cardiac output; Blood pressure; Pulmonary and Systemic circulation; Regional blood flow: Pulses
Muscular system (6 hours)	**12 – 13**		Muscle function, contractile process, skeletal, cardiac and smooth muscle
Practicum (10 hours)	**13 - 15**		

References

1) Ganong, W. F. (2006). Review of Medical Physiology. 23rd edition. Boston: McGraw Hill
2) Green, J. H. and Silver, P. H. S. (1981). An introduction to Human Physiology. Oxford: Oxford University Press
3) Guyton, A. C. & Hall, J. E. (2012) Textbook of Medical Physiology, 12th Edition. Philadelphia: Saunders Elsevier
4) Netter, F. H. (2010). Atlas of Anatomy. 5TH Edition. Philadelphia: Saunders Elsevier
5) Sembulinganx, K. S. P. (2001). Essentials of Medical Physiology (2nd edition) New Delhi: Jaypee
6) Thibodeau, G. A. & Patton. K. V. (2007) Anatomy and Physiology (6th Edition) St. Louis: Mosby
7) Tortora, G. J. and Derrickson, B. H. (2008). Principles of Anatomy and Physiology. Vol. I & II, 12th Edition. New York: John Wiley & Sons
8) van De Graaff, K. M. & Fox, S. I. (1995). Anatomy and Physiology (4th Edition) Dubuque: WC Brown
9) Waugh, A. and Grant, A. (2010). Ross and Wilson Anatomy and Physiology in Health and Illness. 11th edition. Edinburgh; New York: Churchill Livingstone

Module 7: Clinical Methods I

Module No: 7 **Code:** CMCM 11 **Hours:** 60 **Credit Factor:** 6

Module Competence: The module is designed to equip the leaners with knowledge and skills to communicate, take appropriate history and perform physical examination

Course Outline

Unit	Week No	Lecture No	Content
Communication skills and History Taking (16 hours)	1 – 4		Clinician-client relationship; the communication process and observing; Choice of words (ways of asking questions, rephrasing, paraphrasing); Summarization; Receiving and giving feedback; Expressing feelings; Medical History taking
General Examination and Vital Signs (8 hours)	5 – 6		Examination techniques - inspection, palpation, percussion and auscultation; General examination of the patient in a regional format from head-to-toe; Head, neck, mouth, trunk and extremities; Vital signs: – temperature, pulse, respiratory rate and blood pressure. Children – weight, height/length, head circumference, MUAC; Adults - BMI
Respiratory System examination (6 hours)	7 – 8		Signs and symptoms of respiratory disorders; Landmarks for physical examination of the respiratory system; Examination techniques - inspection, palpation, percussion and auscultation of the respiratory system; Diagnostic and therapeutic procedures – chest x-ray and endoscopy, sputum examination, hematological studies.
Cardiovascular system examination (6 hours)	8 – 9		Signs and symptoms of CVS disorders; Landmarks for physical examination of the cardiovascular system; Examination techniques, inverted "J: - inspection, palpation, percussion and auscultation of the respiratory system; Diagnostic and therapeutic procedures – chest x-ray and ECG and hematological studies.
Digestive system and abdominal examination (8 hours)	10 – 11		Signs and symptoms of GIT disorders; Landmarks for physical examination of the abdomen; Examination - inspection, palpation, percussion and auscultation of the respiratory system; Digital rectal examination, other therapeutic and diagnostic procedures – x-rays, abdominal paracentesis, ultrasound, endoscopy
Genital urinary system examination (6 hours)	12 – 13		Signs and symptoms of GUT disorders; Landmarks for physical examination of the abdomen; Examination – inspection of the genitalia, percussion and auscultation of the lower abdomen. Examination of the kidneys; Diagnostic and therapeutic procedures – illumination, urinalysis HVS, pelvic ultrasound, colposcopy
Neuromusculoskeletal examination (10 hours)	13 – 15		**NERVOUS**: Signs and symptoms of nervous disorders, higher centres, cranial nerves, motor function, sensory function, signs of meningeal irritation, ANS function. Investigations and diagnostic procedures – X-ray, CT scan, MRI, lumbar puncture, and others. **MSS**: common signs and symptoms, examination of muscles, joints and bones.

References

1) Glynn, M., Deake, W. M and Hutchison, R. (2012). Hutchison's Clinical Methods: An Integrated Approach to Clinical Practice. Edinburgh: Elsevier

2) Houghton, A. R., Gray, D. and Chamberlin, E. R. (2010). Chamberlin's Symptoms and signs in Clinical Medicine, London: Hodder Arnold
3) Lippincott Williams and Wilkins. (2010). Professional Guide to Sign and Symptoms, 6th Edition. Philadelphia: Wolters Kluwer/Lippincott Williams and Wilkins
4) Lumley, J.S.P. and Bailey, H. (20010. Hamilton Bailey's Physical Signs: Demonstration of Physical Signs in Clinical Surgery. London: Arnold
5) Macleod, J., Douglas, G., Nicol, E. F. and Robertson, C. (2009). MacLeod's Clinical Examination. Edinburgh: Churchill Livingstone Elsevier
6) Tally, N. J. and O'Connor, S. (2001). Clinical Examination: A Systemic Guide to Physical Examination. Edinburgh: Churchill Livingstone/Elsevier
7) Thomas, J. and Mohaghan, T. (2014). Oxford Handbook of Clinical Examination and Practical skills. Oxford: Oxford University Press

Module 8: Medical Parasitology and Laboratory Techniques I

Module No: 8 **Code:** CMPL 11 **Hours:** 30 **Credit Factor:** 3

Module Competence: The module is designed to enable the learner understand the mechanism by which parasites cause diseases on the human body, control and preventive measures of those diseases

Course Outline

Unit	Week No	Lecture No	Content
Introduction to Parasitology (10 hours)	1 – 5		Definition of common terminologies; Classification of parasites and vectors; Modes of transmission of parasitic infections; Sources of infections and portal of entry; Host-parasite relationships.
Helminthology (20 hours)	6 - 15		Classification of helminths; modes of transmission of helminths; natural history of helminths; prevention of helminthic infections. **Cestoda**: - *Taenia saginata, Taenia solium,* Other Taenias, *Hymenolepsis nana, Diiphyllobothrium latum, diminuta, Echinococcus granulosus*; **Trematoda**: - *Fasciola hepatica; Schistosoma haematobium; Schistosoma mansonii, Schistosoma japonicam*. **Nematoda** - *Ascaris lumbricoides, Enterobius vermicularis. Dracunculus medinensis, Trichuris trichura, Trichinella spiralis, Necator americanas, Ancyclostoma duodenale, Strongiloides stercoralis, Loa loa, Wuchereria bancrofti , Onchocerca volvulus*

References

1) Chiodini, P. L. and Moody, A. H. (2000). Atlas of Medical Helminthology and Protozoology, 4th Edition: Churchill Livingstone
2) Stanlake, J. B. (2014). Introduction to Parasitology. Edinburgh: Elsevier Science

Module 9: Medical Microbiology I

Module No: 9 **Code:** CMMM 11 **Hours:** 30 **Credit Factor:** 3

Module Competence: The module is designed to enable the learner explain the mechanism by which microorganisms cause disease in the human body

Course Outline

Unit	Week No	Lecture No	Content
Introduction to Microbiology (10 hours)	1 – 5		Definition of terms in medical microbiology; Overview of microbiology; Requirements for bacterial growth; structure and function of prokaryotic cell, eukaryotic cells, fungi; Sources and transmission of infection; Sterilization and disinfections; Definitions and terminologies; Nasocomial infections (risks to patients and health workers); straining procedures
Bacteriology I – The Cocci (10 hours)	6 – 10		Structure, Classification, characteristics, transmission, clinical presentation, diagnosis, preventive and control measures; The Cocci -Streptococci (Strep. pyogenes, Strep. pneumoniae, Strep. agalactiae, Strep. bovis, Strep. equinas, Strep. viridans, Strep. zooepidemicus, Strep. suis), Staphylococci (S. aureus, S. epidermidis, S. saprophyticus, S. haemolyticus), Neisseria (N. meningitidis, N. gonorrhoeae and N. lactamica) and Moraxella (M. catarrhalis)
Bacteriology II – The Bacilli (10 hours)	11 - 15		Structure, Classification, characteristics, transmission, clinical presentation, diagnosis, preventive and control measures; The Bacilli-Bacillus (B. anthracis), Clostridia (Cl. perfringes, Cl. sporogens, Cl. septicum, Cl. novyi, Cl. tetani, Cl. botulinum and Cl. dificile); Corynebacterium (C. diphtheriae, C. ulcerans, C. minutissinum, C. pseudotuberculosis), Mycobacterium (M. tuberculosis, M. bovis, M. africanum, M. leprae), Atypical mycobacteria; Environmental mycobacterium; Actinomycosis (A. Israeli, A. gerencseviae, A. bovis) and Nocardia (N. asteroids, N. brasilienses, N. caviae; Other Bacilli, Enterobacteria, Pseudomonas, Brucella, Bordetella, Lactobacillus, Vibrio cholerae, Yersinia, Fusiform. Coliforms – Escherichia coli, Klebsiella, Enterococcus (E. feacalis, E. faecium, E. durans, E, avium), Proteus, Salmonella, Shigella, Yersinia, Haemophilus, Trepanoma, Leptospira, Spirilium, Compylobacter, Helicobacter, Borrelia, Spirillium, Chlamydiae, Rickettsia and Mycoplasmas

References

1) Turk, D. C. (1978). A Short Textbook of Microbiology. London: Hodder and Stroughton
2) Mims, C. A. (2004). Medical Microbiology. Edinburgh: Mosby
3) Murray, P. R. and Baron, E. J. (2007). A Manual of Clinical Microbiology. Washington: ASM Press

Module 10: General Pathology I

Module No: 10 **Code:** CMGP11 **Hours:** 30 **Credit Factor:** 3

Module Competence: The module is designed to enable the learners understand diseases and diseases processes in the human body

Course Outline

Unit	Week No	Lecture No	Content
Introduction to General Pathology (8 hours)	1		General Introduction to Pathology – General and clinical pathology; History and Terminologies; Pathology – Techniques and Methods of study; Principles of Diagnosis – history taking, physical examination and investigations; Causes of diseases and theories of diseases causation
Cell Pathology (12 hours)	2 – 7		Cellular Adaptations – Atrophy; Hypertrophy; Metaplasia; hyperplasia; Dysplasia; Cell Growth Disorders; Agenesis; Aplasia; Hypoplasia, Dysgenesis; Neoplasia: Cell Injury and Cell Death – causes, types – autolysis, apoptosis and necrobiosis; necrosis – general forms and special forms; Neoplasms – causes, pathophysiology, pathology; clinical features; complications; Epithelial and Connective tissue tumours – benign and malignant tumours; Mechanisms of disease causation
Inflammation and Healing (16 hours)	8 - 15		Introduction to Tissue Response to Injury – Introduction; History; Nomenclature; Function; Causes(agents), inflammatory response; Microcirculation; Phases of Inflammation (Events) - Cellular events (changes), Vascular events (changes); Mediators of Inflammation; Cells of Acute inflammation; Features and Effects of acute inflammation; Cardinal signs; Course, Outcome and Regulation of acute inflammation; Chronic Inflammation; Healing - Introduction, Healing of skin wounds; Factors affecting, Skin grafting; Healing of fractures - Introduction, process, factors, complications

References

1) Kumar, V. K., Abbas, A. K., Fausto, N. and Mitchell, N. (2007). Robin's Basic Pathology (8th edition). Philadelphia; Saunders
2) Kumar, V., Abbas, A. K & Fausto, N.(2004) Pathologic Basis of Disease, 7th Edition; Saunders
3) Lakhani, S. R., Dilly, S. A., Finlayson, C. J. & Dogan, A. (2003). Basic Pathology; An introduction to the mechanics of Disease (3rd edition). London; Bookpower
4) Levison, D. A., Reid, R., Birt, A. D., Harrison, D. J. & Fleming, S. (Eds)(2008). Muir's Textbook of Pathology (14th edition). London; Bookpower
5) Macfarlane Peter S., Reid Robin and Callander Robin (2000) Pathology Illustrated (5th Edition) Edinburgh; Churchill Livingstone
6) McPhee, S. J. and Ganong, W. F. (2006). Pathophysiology of Disease; An introduction to clinical medicine. New York; McGraw Hill
7) Mohan, M. (2005) Textbook of Pathology (5th edition). New Delhi; Jaypee Brothers Medical Publishers
8) Mohan, M. (2013) Textbook of Pathology (7th edition). New Delhi; London: The Health Services Publishers

Module 11: Medical Biochemistry I

Module No: 11 **Code:** CMMB 11 **Hours:** 30 **Credit Factor:** 3

Module Competence: The module is designed to equip the learner with the knowledge to able to apply concepts and principles of biochemistry in clinical practice

Course Outline

Unit	Week No	Lecture No	Content
Essential Biochemistry and Protein synthesis (5 hours)	1 – 3		Introduction, biochemical basis of life, DNA, RNA, Protein synthesis
Protein/Nucleotides metabolism and disorders (5 hours)	3 - 5		Enzymes: - structure, mechanism of activity and regulation (negative and positive feedback). Metabolism of carbohydrates and glycogen, lipids/fats, protein, urea, amino acids and derivatives, purines and pyrimidines; The Krebs cycle;
Biomolecule I (10 hours)	6 – 10		Classification of biomolecules; water, enzymes, vitamins, amino acids, - structure, properties and functions
Biomolecule II (10 hours)	11- 15		Proteins, carbohydrates and lipids, - structure, properties and functions

References

1) Murray, R. K., Bender, D.A., Botham, K. M., Kennelly, P. J., Rodwell, V. w. and Weil, A. (2009)). Harper's Illustrated Biochemistry, 28th Edition New York, McGraw-Hill Publishers
2) Murray, R. K., Granner, P. A. and Rodwell, V. W. (2006). Harper's Illustrated Biochemistry, 26th Edition New York, McGraw-Hill Publishers
3) Nelson, D. and Cox, M. (2013). Lehninger Principles of Biochemistry. New York: Freeman
4) Montgomery R, AA Spector, D Chappell and TW Conway (1996) Biochemistry; A- case-oriented Approach; International Edition, 6th Ed. St. Louis: Mosby ISBN 0-8151-6483-1
5) Nelson DI & MM Cox (2000). Lehninger Principles of Biochemistry, 3rd Ed., Macmillan Worth Publishers

Module 12: Pharmacology and Therapeutics I

Module No: 12 **Code:** CMPT 11 **Hours:** 30 **Credit Factor:** 3

Module Competence: The module is designed to equip the learner with the appropriate knowledge, skills and attitude in pharmacology and therapeutics to enable them manage patients effectively

Course Outline

Unit	Week No	Lecture No	Content
Introduction to Pharmacology and Therapeutics (4 hours)	1 - 2		Definitions and terminologies in pharmacology, sources of drugs. Nature and classification of drugs, proprietary and non-proprietary names of drugs, routes of administration. Rational use of drugs, principles of drug prescribing, essential drugs list, drug policy, Pharmacy and Poisons Act; preparations – tablets, capsule, syrup, ampoules, vials, powder, creams, lotions, ointments, pessaries, suppositories;.

Pharmacokinetics (6 hours)	3 – 5		Drug movement across biological membranes, drug absorption and bioavailability, drug distribution, sequestration and plasma protein binding, drug metabolism, non-synthetic and synthetic reactions, metabolising enzymes, drugs excretion and half-life
Pharmacodynamics (10 hours)	6 - 10		Mechanisms of drug action through physical action, chemical action, receptors, enzymes, antimicrobial action, transport processes, synergism, antagonism, dosage schedules, factors modifying drug action. Side effects of drugs; Toxic effects; Drug allergy; Intolerance; Secondary effects; Idiosyncrasy, drug dependence, drug withdrawal reactions, drug poisoning, antidotes. Drug interaction, drug interaction outside the body, drug interaction during absorption, distribution, metabolism, excretion and at receptors (pharmacodynamic interaction)
Anti-Parasitic Agents (10 hours)	11 - 15		Classification of antiparasitic drugs, mechanisms of action, pharmacokinetics, adverse effects, uses. Antimalarial agents:- chemical classification – 4 and 8-aminoquinolones, antimetabolites, arylaminoalcohols, phenanthrene methanol, sesquiterpenes and antibiotics; Clinical classification – tissue schizonticides, erythrocytic drugs and gametocidal drugs); Antiamoebic agents; Antileishmania agents ; Antitrypanosoma agents; Antihelminthic drugs;

References

1) Bennet, P. N., Brown, P. N. and Sharma, P. (2012). Clinical Pharmacology. Edinburgh: Elsevier
2) Rang, H. P., Dale, M. M., Ritter, J. M. & Moore, P. K. (2003). Pharmacology (5th Edition). Edinburgh: Churchill Livingstone
3) Rang, H. P., Ritter, J., Flower, R. J. and Henderson, G. (2015). Rang & Dale's Pharmacology, 16th Edition. London: Churchill Livingstone
4) Ritter, J., Lewis, L. D., Mant, T. G. K. and Ferro, A. (1999). A Textbook of Clinical Pharmacology and Therapeutics, 5th Edition. London: Hodder Arnold
5) Satoskar, R. S., Bhandarkar, S. D., Rege, N. N. and Joshi, C. N. (2005). Pharmacology and Pharmacotherapeutics. Mumbai: Popular Prakashan
6) Sengupta, P. R. (2009). Medical Pharmacology. New Delhi: CBS Publishers & Distributors
7) Sharma, U. N. (2007) Essentials of Pharmacology: Basic Principles and General Concepts (3rd Edition). New Delhi: CBS Publishers
8) Tripathi, K. D. (2008). Essential Medical Pharmacology. New Delhi: Jeypee. Bros

Module 13: Community Health I

Module No: 13 **Code:** CMCH 11 **Hours:** 30 **Credit Factor:** 3

Module Competence: The module is designed to equip the learner with the appropriate knowledge, skills and attitude necessary for implementation of community health and nutrition programs

Course Outline

Unit	Week No	Lecture No	Content
Introduction to Community	1 - 3		**The Community**: Definition, Characteristics; theories, types of communities, Community structure; Factors that hold communities together; The Culture; Social Institutions and Leadership; **Introduction to**

Unit	Week No	Lecture No	Content
Health (10 hours)			**Community Health:** Concepts & definitions in community and public health, Foundations & determinants of community health; Health wants needs & demands of a community; Stake holders; Natural History of disease and levels of prevention Community participation, mobilization & organization; empowerment; Health promotion, protection and advocacy - Definitions, principles, strategies; Community Organizations; Group dynamic & teamwork
Health Education (8 hours)	4 - 5		Definition, principles, models, strategies, teaching methods, teaching aids, role of health workers in education
Nutrition (10 hours)	6 - 10		**Introduction to Human Nutrition**: Terms; Factors that influence food choices, Diet planning; Dietary standards, Food composition table and pyramid; **Macro-Molecules** – carbohydrates and Proteins: - Structure; Sources; Functions; Metabolism and requirements; associated diseases; **Macro Molecules** – Lipids - Structure; Sources; Functions; Metabolism and requirements; associated diseases ; **Vitamins** – Lipid and Water Soluble - Structure; Sources; Functions; Metabolism and requirements; associated diseases; **Water and Minerals** - Structure; Sources; Functions; Metabolism and requirements; associated diseases; Terms, Goals, Present trends in community nutrition, Groups affected by hunger and nutrition; Causes of malnutrition; Relationship between Food and Infection or Disease; Assessment of Nutritional status – Direct methods (anthropometry, biochemical tests, clinical assent and dietary assessment) and Indirect methods; World Food issues and Food Security; Nutrition in Special Groups; Common Nutritional Problems in Communities
Primary Health Care and Community Based Health care (10 hours)	11 - 15		PHC - Historical Background and evolution; Pillars; principles, PH.; Elements and the Bamako Initiative: The Role of the community; KHSSP; MDGs and SDGs - Definitions; concepts; historical background; All MDGs but with emphasis on the 3 health related goals: Goal 4 (reduce child mortality), Goal 5(improve Maternal Health) and Goal 6 (combat HIV/AIDS, malaria and other diseases) Discuss the MDGs/SDGs **Community Health Strategy - Introduction:** Definition (WHO); History of health services in Kenya; Community Health Strategy - Concepts, definitions, elements, approaches**; levels of Health Care**; CBHC – principles, elements, strategies; home based care; **School Health** - Organization, objectives, planning and implementation, activities, evaluation; Role traditional health workers- recruitment, selection, training, community participation

References

1) Bowden, J. C. and Manning, V. (2006). Health Promotion in Midwifery: Principles and Practice. New York: Hodder Arnold
2) DiClemente, R. J., Crosby, R. A. and Kegler, M. C. (eds.). (2002). Emerging Theories in Health Promotion Practice and Research: Strategies for Improving Public Health. Sa Francisco: Jossey-Bass, John Wiley & Sons

3) Elwes, L. (ed.). (2005). Key Topics in Public Health: Essential Briefings on Prevention and Health Promotion. Edinburgh: Elsevier
4) Green, I. W. and Ottoson, J. M. (1998). Community and Population Health. 8th edition. St. Loius, New York and Toronto: WCB/McGraw-Hill
5) Hawker, J., Begg, M., Blair, I., Reinjes, R. and Weinberg, J. (2005). Communicable Disease Control Handbook. Massachusetts: Blackwell Publishing
6) Heymann, D. (Ed.). (2004). Control of Communicable Disease Manual. Washington, DC: American Public Health Association
7) McKenzie, J. F., Pinger, R. R. and Kotecki, J. E. (2008). An Introduction to Community Health, 6th Edition; Boston, Toronto: Jones and Bartlett Publishers
8) McKenzie, J. F. and Pinger, R. R. (2014). An Introduction to Community Health, Brief Edition; Boston, Toronto: Jones and Bartlett Publishers
9) Naidoo, J. and Wills, J. (2009). Foundations of Health Promotion. Oxford: Saunders
10) Nordberg, E. and King'ondu, T. (2007). Communicable Diseases. 4th edition. Nairobi: AMREF
11) Taylor, R. & Taylor, B. (1994). AUPHA Manual of Health Services Management. Massachusetts: Jones and Burtlett Publishers

SEMESTER 2 (Y1S2)

MODULES

Module 14: First Aid

Module No: 14 **Code:** HCS 1208 **Name:** First Aid

Hours: 30 **Credit Factor:** 3 Lecturer(s):

Module Competence: The module is designed to equip the learner with knowledge, skills and attitudes necessary to provide services in a health care facility and community level

Course Outline

Unit	Week No	Lecture No	Content
Overview of First Aid (6 hours)	1 - 3		Introduction, Principles and Practice, Aims of First Aid, responsibilities of a first aider, scope, Wight qualities of a first aider, features and content of the first aid kit, incident management; AMEGA principles (assessing the area, managing the incident, emergency aid, get help, deal with the aftermath)
Casualty management (4 hours)	4 – 5		The emergency process (primary survey), DRABC, secondary survey/Top-to-Toe
Management of conditions of body system (6 hours)	6 - 8		Conditions of the respiratory, circulatory and central nervous system
Management of various emergency conditions (4 hours)	9 - 10		Medical emergency conditions – diabetes, hypoglycaemia, hyperglycaemia, allergy, fever, meningitis, headache, ear ache and tooth ache, abdominal pain, vomiting and diarrhoea, poisons, bites and strings, foreign bodies, emergency child birth, stages of labour, signs and symptoms of labour
Management of Body injuries (6 hours)	11 - 13		Fractures, dislocations, wounds, sprains, strains, head injuries, burns and scalds, extremes of temperature
Skills Demonstration and practice (4 hours)	14 - 15		External chest compression and cardiopulmonary resuscitation (CPR), artificial ventilations, recovery position, incidents management and casualty attention, bandaging and dressing, lifting, moving, carrying and transportation of a casualty, ambuabce drill. General casualty management

References

1) St. John Ambulance. (2000). Lifesaver International First Aid: St John Ambulance
2) St. John Ambulance, St. Andrew's First Aid and British Red Cross. (2011). First Aid Manual. London: Dorling Kindersley Limited
3) St. John Ambulance. (2013). First Aid Program Manual. London: The Order of St. Joh, Priory House
4) The KMTC Skillslab (2001). First Aid Manual KMTC-VVOB Skills lb Project. Nairobi: Kenya

Module 15: Human Anatomy II

Module No: 15 **Code:** HCS 1207 **Hours:** 60 **Credit Factor:** 6

Module Competence: The module is designed to equip the leaners with knowledge to understand the human body structure to apply in diagnosis and management of disease

Course Outline

Unit	Week No	Lecture No	Content
Body System 2	1	1 – 2	Respiratory system – organization, organs, accessory organs, blood and nerve supply
	2	3 – 4	
	3	5 – 6	Skeletal system – An overview of Bones; definition, arrangement, composition, bones – classification, landmarks; Joints
	4	7 – 8	The appendicular skeleton: - Pectoral girdle; Upper limb bones (humerus, radius, ulna, etc.) Pelvic girdle, Lower limb bones, joints
	5	9 - 10	Axial skeleton: - The skull; Vertebral column and thoracic bones
	6	11 – 12	Muscular System – skeletal muscles, smooth muscles; Muscles of the head and neck
	7	13 – 14	Muscles of the upper and lower limbs
	8	15 - 16	Muscles of the trunk
	9	17 – 18	Digestive system – organization, organs and accessory organs, blood and nerve supply
	10	19 – 20	
	11	21 – 22	Reproductive system - organization, organs, accessory organs, blood and nerve supply
	12	23 – 24	
	13	25 – 26	
Special Senses	14	27 – 28	The Eye and Tongue
	15	29 – 30	The Ear and Nose

References

1) Drake, R. L., Vogl, W. A. and Mitchell, A.W.M. (2005). Gray's Anatomy for Students. Toronto, Ontario, Canada: Elsevier Churchill Livingstone
2) Langman, J. and Sadler, T. W. (2004). Langman's Medical Embrology, 9th Edition, Baltimore: Lippincott Williams & Wilkins
3) Netter, F. H. (2010). Atlas of Anatomy. 5TH Edition. Philadelphia: Saunders Elsevier
4) Rice. J. (2004). Medical Terminology with Human Anatomy. 5th Edition, New Jersey: Prentice Hall Inc.
5) Romanes, G. J. (2000). Cunningham's Manual of Practical Anatomy: Volume I – Upper and Lower Limbs, 15th Edition, Oxford: Oxford University Press

Module 16: Human Physiology II

Module No: 16 **Code:** HCS 1206 **Hours:** 60 **Credit Factor:** 6

Module Competence: The module is designed to equip the leaners with knowledge to understand the human body function to apply in diagnosis and management of disease

Course Outline

Unit	Week No	Lecture No	Content
Respiratory	1	1 – 2	Review structures, functions, defense mechanisms,
	2	3 – 4	Mechanism for ventilation, regulation of respiration,
Urinary System	3	5 – 6	Review of kidney structures and accessory organs, blood supply
	4	7 – 8	Functions of the kidneys, concept of plasma clearance
Gastrointestinal tract	5	9 - 10	Review structures, functions, enzymes and hormones
	6	11 – 12	Absorption of nutrients and feedback mechanism in the GIT, accessory organ
Endocrine system	7	13 – 14	Hormones – composition, characteristics, production, actions; feedback mechanisms in regulation
	8	15 - 16	Endocrine glands and target tissues abnormalities of endocrine system
Reproductive system	9	17 – 18	Review structures, functions of reproductive structures
	10	19 – 20	Hormones in male and female reproductive systems, menstrual cycle, menopause and andropause; fertilization, implantation
Nervous system	11	21 – 22	Organization, Meninges, CSF and Blood brain barrier (BBB)
	12	23 – 24	Neurons, action Potential, Impulse transmission, synapses
	13	25 – 26	Functions of the Nervous system, peripheral nervous system motor systems
	14	27 – 28	Autonomic Nervous System
Sensory system	15	29 – 30	Functions of the skin, ear, eye, general sensory receptors, pressure, temperature, proprioception and touch

References

1) Ganong, W. F. (2006). Review of Medical Physiology. 23rd edition. Boston: McGraw Hill
2) Green, J. H. and Silver, P. H. S. (1981). An introduction to Human Physiology. Oxford: Oxford University Press
3) Guyton, A. C. & Hall, J. E. (2012) Textbook of Medical Physiology, 12th Edition. Philadelphia: Saunders Elsevier
4) Netter, F. H. (2010). Atlas of Anatomy. 5TH Edition. Philadelphia: Saunders Elsevier
5) Sembulinganx, K. S. P. (2001). Essentials of Medical Physiology (2nd edition) New Delhi: Jaypee
6) Thibodeau, G. A. & Patton. K. V. (2007) Anatomy and Physiology (6th Edition) St. Louis: Mosby
7) Tortora, G. J. and Derrickson, B. H. (2008). Principles of Anatomy and Physiology. Vol. I & II, 12th Edition. New York: John Wiley & Sons
8) van De Graaff, K. M. & Fox, S. I. (1995). Anatomy and Physiology (4th Edition) Dubuque: WC Brown
9) Waugh, A. and Grant, A. (2010). Ross and Wilson Anatomy and Physiology in Health and Illness. 11th edition. Edinburgh; New York: Churchill Livingstone

Module 17: Clinical Methods II

Module No: 17 **Code:** CMCM 12 **Hours:** 30 **Credit Factor:** 3

Module Competence: The module is designed to equip the leaners with knowledge and skills to communicate, take appropriate history and perform physical examination

Course Outline

Unit	Week No	Lecture No	Content
Introduction to Nursing and Clinical Skills	1	1	Nursing procedures – documentation, patient feeding, isolation techniques, sterile techniques, surgical asepsis, patient ambulation, pre-and post-operative care
	2	2	Applying restraints, applying bandages, wound care, medication, and blood transfusion, enema. Colostomy care, oxygen ambulation, bladder irrigation, NG tube feeding
	3	3	Care of patients with chest tube, venipuncture, ear swabbing and syringing, eye swabbing and irrigation
	4	4	Diagnostic and therapeutic procedures – otoscopy, endoscopy, laryngoscopy, thoracentesis, radiological investigations, catheterization
Injection Safety, Infection Prevention and Control	5	5	
	6	6	
	7	7	
Practicum and skills Lab	8 - 15	**8 - 15**	**PRACTICAL**

References

1) Glynn, M., Deake, W. M and Hutchison, R. (2012). Hutchison's Clinical Methods: An Integrated Approach to Clinical Practice. Edinburgh: Elsevier
2) Houghton, A. R., Gray, D. and Chamberlin, E. R. (2010). Chamberlin's Symptoms and signs in Clinical Medicine, London: Hodder Arnold
3) Lippincott Williams and Wilkins. (2010). Professional Guide to Sign and Symptoms, 6th Edition. Philadelphia: Wolters Kluwer/Lippincott Williams and Wilkins
4) Lumley, J.S.P. and Bailey, H. (20010. Hamilton Bailey's Physical Signs: Demonstration of Physical Signs in Clinical Surgery. London: Arnold
5) Macleod, J., Douglas, G., Nicol, E. F. and Robertson, C. (2009). MacLeod's Clinical Examination. Edinburgh: Churchill Livingstone Elsevier
6) Tally, N. J. and O'Connor, S. (2001). Clinical Examination: A Systemic Guide to Physical Diagnosis. Oxford: Blackwell: Science
7) Thomas, J. and Mogagham, T. (2014). Oxford Handbook of Clinical Examination and Prcatical Skills. Oxford: Oxford University Press

Module 18: Medical Parasitology and Laboratory Techniques II

Module No: 18 **Code:** CMPL 12 **Hours:** 30 **Credit Factor:** 3

Module Competence: The module is designed to enable the learner understand the mechanism by which parasites cause diseases on the human body, control and preventive measures of those diseases

Course Outline

Unit	Week No	Lecture No	Content
Protozoa	1	1	Classification of protozoa; modes of transmission of protozoa
	2	2	natural history of protozoa; prevention of protozoa infections
	3	3	Plasmodium
	4	4	Plasmodium
	5	5	Toxoplasma, *Pneumocystis carinii*
	6	6	*Entamoeba histolytica, E. coli*
	7	7	Trypanosoma, Leishmania
	8	8	*Cryptosporidium, Giardia lamblia*
	9	9	*Trichomonas hominis, Trichomonas vaginalis*
	10	10	*E. gingivalis, H. nana. Balatidium coli*
Introduction to Laboratory Techniques	11	11	The microscope; Common laboratory equipment Safety measures
	12	12	Collection of specimens, Preparation of specimens; Storage of specimens
	13	13	Chemicals commonly used in the medical laboratory; Preparation of slides; Common stains
	14	14	Introduction to Culture and sensitivity tests. Preparation, collection and examination of pus swabs
	15	15	Sterilization procedures, cleaning, disinfections – by moist heat, ultraviolet radiation, gases, filtration, chemicals; The Microscope

References

1) Chiodini, P. L. and Moody, A. H. (2000). Atlas of Medical Helminthology and Protozoology, 4th Edition: Churchill Livingstone
2) Stanlake, J. B. (2014). Introduction to Parasitology. Edinburgh: Elsevier Science

Module 19: Medical Microbiology II

Module No: 19 **Code:** CMMM 12 **Hours:** 30 **Credit Factor:** 3

Module Competence: The module is designed to enable the learner explain the mechanism by which microorganisms cause disease in the human body

Course Outline

Unit	Week No	Lecture No	Content
Virus	1	1	Viruses – shape, structure, classification, characteristics, prevention and control
	2	2	Herpes viruses (Herpes simplex, Varicella zooster, Epstein-Barr
	3	3	Cytomegalovirus, Human herpes virus
	4	4	Adenoviruses
	5	5	pox viruses, parvo viruses
	6	6	papilloma viruses, polyoma viruses
	7/8	7	hepadna viruses
Fungi	7/8	8	RNA viruses – reverse transcriptase – HIV
	9	9	influenza, rabies
	10	10	paramyxoviruses, pirconavirus
	11	11	Filoviruses – ebola, marburg virus
	12	12	hepadna viruses
	13	13	arbovirus, rota virus
	14	14	corona virus
	15	15	toga viruses, Kuru; CJD

References

1) Turk, D. C. (1978). A Short Textbook of Microbiology. London: Hodder and Stroughton
2) Mims, C. A. (2004). Medical Microbiology. Edinburgh: Mosby
3) Murray, P. R. and Baron, E. J. (2007). A Manual of Clinical Microbiology. Washington: ASM Press

Module 20: General Pathology II

Module No: 20 **Code:** CMGP12 **Hours:** 60 **Credit Factor:** 6

Module Competence: The module is designed to enable the learners demonstrate understanding of disorders of circulation, genetic disorders and immunopathology

Course Outline

Unit	Week No	Lecture No	Content
Disorders of Circulation	1	1 – 2	General Introduction to Circulatory System; Disorders of Blood Flow
	2	3 – 4	Thrombosis and Embolism; Ischaemia and Infarction
	3	5 – 6	Haemorrhage & haemostasis; Blood Donation & Transfusion
	4	7 – 8	Shock I – Causes and Pathogenesis; Shock II – Features and Complications
	5	9 - 10	Fluid Imbalance; Electrolyte Imbalance
		CAT 1	
Genetic Disorders	6	11 – 12	Introduction to Genetics; Genetic Basis of Disease
	7	13 – 14	Sex Linked Disorders; Single Gene Disorders – Autosomal Dominant
	8	15 – 16	Single Gene Disorders – Autosomal Recessive
		CAT 2	
	9	17 – 18	Chromosomal Disorders; Mitochondrial and Metabolic Disorders
	10	19 – 20	Somatic and Multifactorial Disorders
Immunopathology	11	21 – 22	Pathophysiology of Infections; Virulence of Micro-organisms; Introduction to Immunology; Innate Immunity
	12	23 – 24	Humoral Immunity – Antibody mediated immunity (AMI); Cell Mediated Immunity (CMI); Hypersensitivity & Autoimmune Reactions
	13	25 – 26	Hypersensitivity Type I and II Reactions
	14	27 – 28	Hypersensitivity Type III and IV Reactions
	15	29 – 30	Deficiency Disorders; HIV/AIDS

References

1) Kumar, V. K., Abbas, A. K., Fausto, N. and Mitchell, N. (2007). Robin's Basic Pathology (8th edition). Philadelphia; Saunders
2) Kumar, V., Abbas, A. K & Fausto, N.(2004) Pathologic Basis of Disease, 7th Edition; Saunders
3) Lakhani, S. R., Dilly, S. A., Finlayson, C. J. & Dogan, A. (2003). Basic Pathology; An introduction to the mechanics of Disease (3rd edition). London; Bookpower
4) Levison, D. A., Reid, R., Birt, A. D., Harrison, D. J. & Fleming, S. (Eds)(2008). Muir's Textbook of Pathology (14th edition). London; Bookpower
5) Macfarlane Peter S., Reid Robin and Callander Robin (2000) Pathology Illustrated (5th Edition) Edinburgh; Churchill Livingstone
6) McPhee, S. J. and Ganong, W. F. (2006). Pathophysiology of Disease; An introduction to clinical medicine. New York; McGraw Hill
7) Mohan, M. (2005) Textbook of Pathology (5th edition). New Delhi; Jaypee Brothers Medical Publishers

Module 21: Medical Biochemistry II

Module No: 21 **Code:** CMMB 12 **Hours:** 30 **Credit Factor:** 3

Module Competence: The module is designed to equip the learner with the knowledge to able to apply concepts and principles of biochemistry in clinical practice

Course Outline

Unit	Week No	Lecture No	Content
Lipids metabolism and disorders	1	1	Lipid metabolism
	2	2	Lipid metabolism
	3	3	Obesity and Ischeamic Heart Disease
Carbohydrate metabolism and disorders	4	4	Carbohydrate metabolism
	5	5	Carbohydrate metabolism
	6	6	Diabetes mellitus -
	7	7	Diabetes mellitus
	8	8	Diabetes mellitus
Clinical Biochemistry	9	9	Liver Function Tests
	10	10	Liver Function Tests
	11	11	Renal Function Tests
	12	12	Renal Function Tests
	13	13	Lipid Profiles
	14	14	Blood sugar
	15	15	Urinalysis

References

1) Murray, R. K., Bender, D.A., Botham, K. M., Kennelly, P. J., Rodwell, V. w. and Weil, A. (2009)). Harper's Illustrated Biochemistry, 28th Edition New York, McGraw-Hill Publishers
2) Murray, R. K., Granner, P. A. and Rodwell, V. W. (2006). Harper's Illustrated Biochemistry, 26th Edition New York, McGraw-Hill Publishers
3) Nelson, D. and Cox, M. (2013). Lehninger Principles of Biochemistry. New York: Freeman

Module 22: Pharmacology and Therapeutics II

Module No: 22 **Code:** CMPT 12 **Hours:** 60 **Credit Factor:** 6

Module Competence: The module is designed to equip the learner with the appropriate knowledge, skills and attitude in pharmacology and therapeutics to enable them manage patients effectively

Course Outline

Unit	Week No	Lecture No	Content
Antibacterial agents (30 hours)	1	1 – 2	Classification of antimicrobial agents, Mechanisms of action; Principles of antimicrobial treatment Problems associated with antimicrobial use, rational use of antimicrobial agents
	2	3 – 4	Cell Wall Synthesis inhibitors - b-Lactam Antibiotics - Penicillins
	3	5 – 6	Cell Wall Synthesis inhibitors - b-Lactam Antibiotics -Cephalosporins
	4	7 – 8	Cell Wall Synthesis inhibitors - Monobactams, Beta-lactamase inhibibitors, Carbapenems; Glycopeptides e.g. vancomycin and Fosfomycins
	5	9 - 10	Protein Synthesis inhibitors - Tetracyclines and Aminoglycosides; MLSK group – Macrolides, Lincosamides, Streptogramins and Ketolides
	6	11 – 12	Protein Synthesis inhibitors - Phenicols - chloromphenical and derivatives; Glycycyclines; Oxalolidinones; Ansamycins; Streoidal antibiotics – Fusidic acid
	7	13 – 14	Antimetabolites - Sulphonamides and Trimethoprim; Nucleic Acid Synthesis inhibitors - Fluoro-Quinolones (Quinolones); Azoles – Nitroimidazoles; Furanes – Nitrofuration
	8	15 – 16	Membrane Function inhibitors - Lipopeptides (polypepdites) - Polymyxins and Cyclic lipopeptides, Polyene antibiotics
Antifungal agents (10 hours)	9	17 – 18	Classification of antifungal drugs; mechanisms of action; pharmacokinetics; adverse effects; uses.
	10	19 – 20	Drugs - Nystatin, Amphotericin B, griseofulvin, flucytosine, clotrimazole, miconazole, ketaconazole, whitefiled ointment, gentian violet, undecenoid acid cream, sulphur
Antiviral agents (10 hours)	11	21 – 22	Introduction and Classification of antiviral drugs; Mechanisms of action, Pharmacokinetics, indications and contraindications; adverse effects; Gamma globulin; Ribavirin; 5-Fluouracil (5FU); Idoxuride (IDU); Phosphoric acid; Purine analog (Vidarabine); Acyclovir (zovirax); Vancyclovir; Vidarabine; Amantadine; zidovudine, interferons; Trifluridine
	12	23 – 24	ARVS – classification, mechanism of action, pharmacokinetics and pharmacodynamics, HAART and ART regimes
	13	25 – 26	
Topical agents and anti-septic agents (10 hours)	14	27 – 28	
	15	29 – 30	

References

1) Bennet, P. N., Brown, P. N. and Sharma, P. (2012). Clinical Pharmacology. Edinburgh: Elsevier
2) Rang, H. P., Dale, M. M., Ritter, J. M. & Moore, P. K. (2003). Pharmacology (5th Edition). Edinburgh: Churchill Livingstone
3) Rang, H. P., Ritter, J., Flower, R. J. and Henderson, G. (2015). Rang & Dale's Pharmacology, 16th Edition. London: Churchill Livingstone
4) Ritter, J., Lewis, L. D., Mant, T. G. K. and Ferro, A. (1999). A Textbook of Clinical Pharmacology and Therapeutics, 5th Edition. London: Hodder Arnold
5) Satoskar, R. S., Bhandarkar, S. D., Rege, N. N. and Joshi, C. N. (2005). Pharmacology and Pharmacotherapeutics. Mumbai: Popular Prakashan
6) Sengupta, P. R. (2009). Medical Pharmacology. New Delhi: CBS Publishers & Distributors
7) Sharma, U. N. (2007) Essentials of Pharmacology: Basic Principles and General Concepts (3rd Edition). New Delhi: CBS Publishers
8) Tripathi, K. D. (2008). Essential Medical Pharmacology. New Delhi: Jeypee. Bros

Module 23: Behavioral Sciences

Module No: 23 **Code:** CMBS 12 **Hours:** 30 **Credit Factor:** 3

Module Competence: The module is designed to enable the learner understand the use of counseling, sociology and anthropology in the medical profession and patient care

Course Outline

Unit	Week No	Lecture No	Content
Introduction to Sociology	1	1	Early background of sociology (historical aspects); Branches of Sociology
	2	2	Social change – definition and factors that hinder or facilitate change
	3	3	Social institutions; - Basic social institutions - Family: - definition, functions and types; Educational: - definition and functions; Religion: - definition and function
	4	4	Social institutions; - Government or political: - definition and functions; Economic: - definition, types of economic systems and functions; Mass media;
	5	5	Illness and illness behaviour
Introduction to anthropology	6	6	Historical aspect of anthropology; Branches of anthropology
	7	7	Culture and cultural effects on health; Sickness behaviour. Hospitalization
	8	8	Human needs and Motivation – Theories of Motivation
	9	9	Frustration and Defense Mechanisms
	10	10	Conflict resolution
Counselling	11	11	Definitions; The concept of counselling; types of counselling, characteristics of a counsellor,
	12	12	Theories: - Behavioural, Psychoanalytic, Humanistic and Eclectic;
	13	13	Counselling skills; Crisis intervention and management;
	14	14	Problem solving process;
	15	15	Steps to counselling; Process of counselling e.g. “GATHER”; SOLER; Interviewing techniques;

References

1) Feldman, R. S. (2005). Essentials of Understanding Psychology. University of Massachusetts-Armherst: McGraw-Hill
2) Santrock, J. W. (2004). Lifespan Development. University of Texas, Dallas: McGraw-Hill
3) Santrock, J. W. (2009). Lifespan Development, 12th edition. University of Texas, Dallas: McGraw-Hill
4) Schuster, C. S. and Smith-Ashborn, S. (1992). The Process of Human Development: A Holistic Life Span Approach, New York: Lippincott

Module 24: Community Health II

Module No: 24 **Code:** CMCH 12 **Hours:** 30 **Credit Factor:** 3

Module Competence: The module is designed to equip the learner with the appropriate knowledge, skills and attitude necessary to identify environmental factors that have adverse effects on the health and environment

Course Outline

Unit	Week No	Lecture No	Content
Introduction to Environmental Health and Pest Control	1	1	Introduction – definition, types
	2	2	Factors influencing the Environment
	3	3	Pollution – Sources, Effects and Control
	4	4	Pests, Rodents and Vermis Control
	5	5	Pollution – Sources, Effects and Control
Waste management and Housing	6	6	Waste management – definition and types of waste; relation to disease
	7	7	Solid waste management
	8	8	Liquid waste management
	9	9	Hospital waste management
	10	10	Housing – definition, types and characteristics Diseases associated with Housing
Water supply and Food hygiene	11	11	Water – definition, sources and characteristics, protection
	12	12	Sampling, water treatment and storage
	13	13	Water borne diseases
	14	14	Food hygiene – definitions, handling and storage; hygiene principles
	15	15	Food spoilage, common poisonous foods, milk and milk products; Public Health Act – Cap 242

References

1) Afubwa, S. O. and Mwanthi, A. M. (2014). Environmental Health and Occupational Health & Safety, Nairobi: Acrodile Publishing Ltd
2) Blanch, S. (2003). Food Hygiene. London: Hodder Education
3) Cannolly, M. A. (Ed). (2005). Combinable Disease Control in Emergencies: A Field Manual. Gene va: WHO
4) Chesworth, N. (1999). Food Hygiene Auditing. Philadelphia: Springer Publishing
5) Government of Kenya. (1999). Environmental Management and Coordination Act, Nairobi: Government Printers
6) Ministry of Health. (2008). The National Healthcare Waste Management Plan for 2008 – 2012. Nairobi: Government Printers
7) Mortimore, S. and Wallace, C. (1998). HACCP: A Practical Approach (Practical Approaches to Food Control and Food Quality Series), 2nd edition. Philadelphia: Springer Publishing
8) Peirce, J., Vesilind, P. A. and Weiner, R. (1997). Environmental Pollution and Control, 4th Edition, Madison: Butterworth-Heinemann
9) Service, M. (2008). Medical Entomology, 4th Edition, Cambridge: Cambridge University Press

Appendix: Timetable