بسم الله الرحمن الرحيم

CURRICULUM / STATUTES/ REGULATIONS

FOR 2 YEARS

Diploma in Family Medicine

Faisalabad Medical University

Faisalabad

Contents

Section A

VISION STATEMENT:

Faisalabad Medical University has been established since 05-05-2017 for purpose of imparting better medical education and encouraging and arranging extensive research and publication in the field of medical science. The vision of university is:

"Striving to achieve national and international stature in undergraduate and postgraduate medical education with strong emphasis on professionalism, leadership, community health services, research and bioethics"

MISSION STATEMENT

The mission of the University is:

"Educate Healthcare professionals to prevent, diagnose and treat human illnesses to practice evidence-based medicine with focus on lifelong healthcare in order to meet the challenges of community needs and competitive medical profession at the same time"

STATUTES

Nomenclature

The name of degree programmer shall be Diploma in Family medicine

Course Title:

Diploma in Family medicine

Training Centers

Department of (Medicine) in Affiliated hospitals of Faisalabad Medical University, Faisalabad.

Duration of Course

The duration of course shall be five 2 years with structured training in a recognized department under the guidance of an approved supervisor.

Course outline

The course is structured in two parts:

Part I: The candidate shall undertake the training in the basic sciences as per curriculum. 75% content will be uniform for all the specialties, approved by the Dean basic sciences and academic council, while 25% will be subject specific, provided and approved by the relevant department and academic council. At the end of 6-month, Part I Examination will be held by the examination department of Faisalabad medical University as per the table of specification in the basic medical Sciences subjects with same percentage of content from uniform and subject specific content as indicated above i.e. 75% and 25% respectively. All the candidates will attend clsses in basic science departments as per the time table for 5 days(mon-fri) and on Saturday they will attend the class in their respective specialty as per the time table provided by the university during first 6 months.

Part II: The candidate shall undertake training in the specialized department as per the curriculum. At the end of 2 years, Part II Examination will be held by the examination department of Faisalabad medical University as per the table of specification in the subject concerned.

Section B:

COURSEOUTLINE

ADMISSION CRITERIA:

Applications for admission to DIPLOMA will be invited through advertisement in print and electronic media and according to guidelines and rules approved by the Faisalabad Medical University

DOCUMENTSREQUIREDFORTHEADMISSION:

- Completed Diploma in Family medicine form
- Copy of MBBS degree with detailed mark sheets of all professional examinations and certificate of number of attempts in professional examinations
- Copy of permanent PMDC registration certificate
- Three latest passport size photographs
- Certificates of completion of 1-year house job

GENERALREQUIREMENTS

Candidates eligible for admission should have MBBS or equivalent qualification, permanent registered with PMC and can fulfill the following criteria:

(a): SPECIAL REQUIREMENTS

1. Securing pass percentage in the entry test as determined by the FMU
2. Qualifying the interview successfully

REGISTRATION AND ENROLLMENT

- ✓ Total number of students enrolled for the course must not exceed 10 per year
- ✓ FMU, Faisalabad will approve supervisors for diploma courses
- ✓ Candidates selected for the courses will be registered with relevant supervisors and enrolled with FMU

TEACHING FACULTY OF DIPLOMA IN DIABETES:

Full time and qualified teaching staff, Professor / Associate professor /Assistant Professors / SR of Concerned Departments (basic sciences, Medicine and Allied, Nutritionist) of FMU shall be responsible for the teaching, training and supervision of their trainees in DIPLOMA IN FAMILY MEDICINE. The University can also hire and involve national and international faculty as per course requirements and objectives and they will be paid as per the university policy decided by the academic council and syndicate.

Instructional Strategies:

As a policy, active participation of students at all levels will be encouraged.

Following teaching modalities will be employed:

1. Lectures
2. Seminar Presentation and Journal Club Presentations
3. Group Discussions
4. Grand Rounds
5. Clinico-pathological conferences
6. SEQ as assignments on the content areas
7. Assigning routine lab work
8. Slide sessions on multiheaded microscope
9. Self-study, and use of internet

Section C:

AIMS AND OBJECTIVES OF THE COURSE:

AIM:

The overall aim of the program is to producetrainedfamily physicians through structured training so that they can provide comprehensive, evidence based, ethical and holistic care to the masses

Learning Outcomes

1. To adopt a bio-psycho-social model taking into account the cultural dimensions
2. To build an effective patient-physician relationship
3. To master effective and appropriate care provision and health service utilization
4. To provide longitudinal continuity of care as determined by the needs of the patient
5. To demonstrate professionalism in dealing with others
6. To adopt evidence based clinical information management
7. To use effectively and efficiently diagnostic and therapeutic interventions as needed
8. To appropriately refer to other health professionals and specialists as needed
9. To promote health and wellbeing by applying health promotion and disease prevention strategies appropriately
10. To understand the Essential Service Delivery Package of Government of Pakistan
11. To understand the Universal Health Coverage
12. To understand the healthcare delivery system of Pakistan with special emphasis in Primary Health Care

Section D:
PROGRAMME FORMAT

Course Outline

Part I –06months:

A : Basic science:

Anatomy:

Gross Anatomy .of Head & Neck

- SCALP & FACE
- BONY ORBIT
- MANDIBLE & CERVICAL VERTEBRA
- TEMPORAL FOSSA, INFRA TEMPORAL FOSSA & MANDIBLE
- EYE BALL & EXTRAOCCULAR MUSCLE
- FASCIA & TRIANGLES OF NECK
- TONGUE, ORAL CAVITY & SALIVARY GLAND
- LARYNX & THYROID GLAND
- PHARYNX
- EAR
- NOSE & PARANASAL AIR SINUSES
- VESSELS OF HEAD & NECK

- LYMPHATIC DRAINAGE OF HEAD & NECK
- RADIO GRAPHY OF HEAD & NECK
- Cranial Cavity

Gross Ana.of Abdomen & Pelvis

- ANTERIOR ABDOMINAL WALL
- ANTERIOR ABDOMINAL WALL & RECTUS SHEATH
- INGUINAL CANAL & HERNIA,SCROTUM & EXTERNAL GENITALIA
- PERITONEUM
- STOMACH & SMALL INTESTINE
- LIVER,PANCREAS,SPLEEN & EXTRAHEPATIC BILLIARY APPARATUS
- BLLOD SUPPLY & NERVE SUPPLY OF ABDOMEN
- LARGE INTESTINE + APPENDIX
- POSTERIOR ABDOMINAL WALL
- BONY PELVIS + JOINTS OF PELVIS
- FEMALE REPRODUCTIVE SYSTEM
- ANAL REGION
- NERVES & VESSELS OF PELVIS
- RADIO GRAPHS OF ABDOMEN & PELVIS

Neuroanatomy

- DURAL VENOUS SINUSES &MENINGIES
- BRAINSTEM 1
- BRAINSTEM 2
- BRAINSTEM 3
- ANS
- CEREBRUM 1
- CEREBRUM 2
- DIENCEPHALON 1

- DIENCEPHALON 2
- VENTRICULAR SYSTEM
- CRANIAL 1
- CRANIAL 2

GROSS ANATOMY OF SPINAL CORD

General & Special Embryology

General & Special Histology

Physiology:

CLINICAL DIPLOMA COURSE OF PHYSIOLOGY

Conceptual and considered approach to

1. Cell physiology
2. Basic and Clinical Neurophysiology
3. Blood physiology
4. Heart and overview of Circulation
5. Renal Physiology
6. Advance Endocrinology
7. Respiratory Physiology
8. Molecular and physiological aspects of Nerve and Muscle

CELL PHYSIOLOGY

1. Functions of cells, cell membranes and its organelles
2. Homeostasis
3. Necrosis

4. Apoptosis

BASIC AND CLINICAL NEUROPHYSIOLOGY

1. Nerve physiology
2. Action potential in nerve fiber, mechanism of generation action potential in a nerve fiber
3. Parts of central, peripheral nervous system and their physiology
4. Autonomic nervous system
5. Special sense vision (eye)
6. Pathophysiology of the diseases involved

BLOOD PHYSIOLOGY

1. Components of blood, functions of blood plasma and plasma proteins
2. Blood grouping and principles of transfusion
3. The body defense systems (Immunology)
4. Disorders of the blood

HEART AND OVERVIEW OF CIRCULATION

1. The basic structure and function of heart, ECG recording and interpretation
2. Conductive pathway of heart
3. Physiological principles to manage a person in shock due to various reasons
4. Disorders of the CVS

RENAL PHYSIOLOGY

1. Basic structure and function of the kidney

2. Glomerular filtration, tubular function and urine formation.

3. Role pf kidney in acid base, Na,K,Ca blance

4. Endocrine and regulatory functions of the kidney

ADVANCE ENDOCRINOLOGY

1. Endocrine glands, classification their functions

2. Feedback control mechanisms

3. Disorders of endocrine glands

Biochemistry

.1. Buffers

- Ionization of water
- Henderson – Hasselbach equation
- Body buffers and regulation of Acid base balance human body
- Acids produced in the body, mechanisms of regulation of pH, role of lungs and kidney in buffering mechanism
- Disorders of acid base metabolism

2. Enzymes:

- Classification/nomenclature, Properties of enzymes and catalysts, regulation of enzyme activity
- Functions of enzymes and catalysts,
- Therapeutic use and application of enzymes in clinical diagnosis
- Enzyme kinetics, Factors affecting enzyme activity (Michaelis – Menten and Lineweaver Burk equations)
- Classification of enzyme inhibitors and their biochemical importance

3. Carbohydrates:

- Definition, biochemical function and classification of carbohydrates, Structure and functions of monosaccharides and their derivatives
- Disaccharides, Oligosaccharides, Polysaccharides and their Biochemical importance.

4. Proteins:

- Definitions, biochemical importance and classification of proteins based on physiochemical properties, Structure of proteins and their significance in pH maintenance
- Amino acids and their structure, properties, functions, Classification and nutritional significance of amino acids,
- Immunoglobulins and their biomedical significance
- Plasma proteins and their clinical significance

5. porphyrins and Hemoglobin:

- Chemistry and biosynthesis of porphyrins and related disorders
- Structures, functions and types of hemoglobin, Oxygen binding capacity of hemoglobin, factors affecting and regulating the oxygen binding capacity
- of hemoglobin, Haemoglobinopathies (Sickle cell disease, Thalassemia etc.) and their biochemical causes
- Degradation of haem, formation of bile pigments, its types, transport and excretion
- Hyperbilirubinemias, biochemical causes and differentiation

6. Lipids and Fatty Acids:

- Classification of lipids and their biochemical functions, Structure and biochemical function of neutral lipids phospholipids, glycolipids and sphingolipids
- Classification of fatty acids and their biochemical functions,
- Eicosanoids and their function in health and disease
- Steroids and their biochemical role, Cholesterol, its structure, chemistry and functions
- Bile acids and bile salts
- Lipid peroxidation and its clinical significance

7. Vitamins and minerals:

- Vitamins and their different types, Classification of vitamins, their chemical structure and biochemical function, Absorption of vitamins and minerals

- Daily requirements, sources of water- and fat-soluble vitamins
- Clinical effects of vitamin deficiency, Role of vitamins as co-enzymes, Hypo- and hyper-vitaminosis
- Minerals in human nutrition, sources, biochemical actions and recommended daily allowance (RDA), Sodium, potassium, chloride, calcium, phosphorus, magnesium, sulfur, iodine, fluoride, Trace elements: Iron, Zinc, Selenium, Iodine, Copper, Chromium, Cadmium, Manganese (Fe, Zn, Se, I, Cu, Cr, Cd and Mn)

8.Endocrinology:

- Introduction of hormones, mechanism of hormone action, classification of hormones
- Endocrine hormones of human body (Synthesis, Secretion, Mechanism of Action, effects on target tissues, regulation, related disorders)

a. Anterior Pituitary Hormones

b. Posterior Pituitary Hormones

c. Hormones of Adrenal Cortex, Adrenal Medulla

d. Sex Hormones of male & female reproductive system

e. Hormones of thyroid gland

f. Parathyroid Hormone

g. Endocrine portion of Pancreas

9.Nucleotides and Nucleic acids:

- Chemistry of purines and pyrimidines, their derivatives, structure and function, Derivatives of purines and pyrimidines, their role in health and disease

- Chemistry and structure of nucleoside and nucleotide and their biochemical role, Nucleic acids (DNA & RNA) their types, structure and functions

10. Bioenergetics and Biological oxidation:

- Endergonic and exergonic reactions, coupling through ATP
- Oxidation and reduction, methods of electron transfer, redox potential, enzymes and coenzymes of biologic oxidation and reduction
- Respiratory chain and oxidative phosphorylation, components of respiratory chain, electron carriers
- ATP synthesis coupled with electron flow

- ADP coupled to electron transfer
- Uncouplers and inhibitors of oxidative Phosphorylation

11.Metabolism of carbohydrates:

- Glycolysis, Phases and reactions of glycolysis
- Energetics of aerobic and anaerobic glycolysis and their importance, Regulation of glycolysis
- Cori's cycle, The fate of pyruvate
- Citric Acid Cycle, Reactions, energetics and regulation and importance of citric acid cycle
- Amphibolic nature of citric acid cycle (tricarboxylic acid cycle –TCA or the Krebs's cycle)
- Anpoleratic reactions and regulations of TCA cycle
- Gluconeogenesis
- Important three by-pass reactions of gluconeogenesis
- Entrance of amino acids and intermediates of TCA cycle and other nutrients as gluconeogenic substrates
- Significance of gluconeogenesis
- Glycogen metabolism
- Reactions of glycogenesis and glycogenolysis
- Importance of UDP-Glucose
- Regulation of glycogen synthase and glycogen phosphorylase
- Glycogen phosphorylase A and the blood glucose sensor
- Disorders of glycogen metabolism (glycogen storage diseases)
- Secondary pathways of carbohydrate metabolism
- Hexose Mono Phosphate (HMP) shunt, its reactions and importance
- Glucuronic acid pathway, its reactions and importance
- Metabolism of fructose, galactose and lactose
- Regulation of Blood Glucose level
- Hyperglycemia, hypoglycemia and their regulating factors
- Biochemistry of Diabetes Mellitus, its laboratory findings and diagnosis

12. Metabolism of Lipids:

- Mobilization and transport of fatty acids, triacylglycerol and sterols
- Oxidation of fatty acids
- Activation and transport of fatty acid in the mitochondria
- β-oxidation, fate of acetyl CoA, regulation of β-oxidation
- Other types of oxidations, i.e., αoxidation, ω-oxidation, peroxisome oxidation, oxidation of odd number carbon-containing fatty acids and unsaturated fatty acids etc.
- Ketogenesis
- Mechanism and utilization of ketone bodies and significance
- Ketosis and its mechanism
- Biosynthesis of fatty acids
- Eicosanoids, synthesis from arachidonic acid, their mechanism and biochemical functions
- Triacylglycerol synthesis and regulation
- Synthesis and degradation of phospholipids and their metabolic

disorders

- Cholesterol synthesis, regulation, functions, fate of intermediates of
- Cholesterol synthesis, hypercholesterolemia, atherosclerosis
- Plasma lipoproteins, VLDL, LDL, HDL, and chylomicrons, their transport, functions and importance in health and disease
- Glycolipid metabolism and abnormalities

13. Metabolism of proteins:

- Amino acid oxidation, metabolic fates of amino acid, transamination, deamination decarboxylation, deamidation and transamination
- Transport of amino group, role of pyridoxal phosphate, glutamate, glutamine, alanine
- Ammonia intoxication, nitrogen excretion and urea formation,
- Urea cycle and its regulation, genetic defects of urea cycle
- Functions, pathways of amino acid degradation and genetic disorders of individual amino acids

14. Metabolism of Nucleotides:

- De novo purine synthesis
- Synthesis of pyrimidine
- Recycling of purine and pyrimidine bases (Salvage pathway)
- Degradation of purine, formation of uric acid
- Disorders of purine nucleotide metabolism

15. Bio signaling:

- G-Protein Coupled Receptor
- Second Messengers
- Tyrosine Kinase Receptor
- Role of cGMP
- Multivalent Adaptor Proteins and Membrane Rafts
- Gated Ion Channels
- Bidirectional Cell-Adhesion Receptors
- Regulation of Transcription by Nuclear Hormone Receptor
- Regulation of Cell Cycle by Protein Kinases
- Oncogenes, Tumor Suppressor Genes, Programmed Cell Death

16. Genes and Chromosomes:

- Chromosomal elements
- DNA supercoiling
- Structure of chromosomes
- Genetic Mutations

17. DNA Metabolism:

- DNA structure
- DNA replication
- DNA damage and repair mechanism
- DNA Recombination

18. RNA Metabolism:

- DNA dependent synthesis of RNA
- RNA processing
- RNA dependent synthesis of RNA & DNA
- HIV Reverse Transcriptase
- Methods for generating RNA polymers

19. Regulation and gene expression:

- Principles of gene regulation
- Process of Transcription, Post-Transcriptional Modification
- Regulation of gene expression in bacteria/eukaryotes
- Genetic code
- Process of Translation, Post-Translational Modification

Metabolic disorders and their Clinical importance

1. Metabolic disorders related to Carbohydrate Metabolism

- Diabetes Mellitus& its complications
- All types of Glycosuria
- Classical Galactossemia
- Hereditary fructose intolerance
- Essential Fructosuria
- Essential Pentosuria
- G-6 PD deficiency
- Hyperosmolar Nonketotic Diabetic Coma
- Glycogen Storage Diseases
- Hypoglycemia
- Lactose intolerance

2. Metabolic disorders related to Lipid Metabolism

- Lipid Storage Diseases

- Ketosis and Ketonuria including Diabetic Ketoacidosis
- Respiratory Distress Syndrome
- Hypercholesterolemia
- All types of Hyperlipidemias including hyperlipoproteinemia
- Hypo lipoproteinemia
- Atherosclerosis, CVA, CHD
- Steatorrhea
- Chyluria
- Cholelithiasis/Obstructive Jaundice
- Congenital Adrenal Hyperplasia
- Carnitine Deficiency
- Fatty liver
- Obesity/Metabolic Syndrome
- Disorders related to oxidation of Fatty Acids (Refsum's Disease, Zellweger syndrome, Methyl Malonic Acidemia, SIDS)

3. Metabolic disorders related to Protein Metabolism

- All types of Uremia
- Hepatic Encephalopathy
- Hyperammonemia
- Arginine-succinic aciduria
- Citrullinemia
- Isovaleric academia
- Glycinuria /Hyperoxaluria
- Cystinuria / Cystinosis
- Phenylketonuria/Albinism
- Tyrosinemia
- Alkaptonuria

- Homocystinuria
- Hartnups disease
- Maple Syrup Urine Disease
- Histidinemia
- Creatinuria
- Carcinoid syndrome

4. Metabolic disorders related to Nucleotides and Nucleic Acids Metabolism

- Hyperuricemia &Hypouricemia
- Gout
- Lesch-Nyhan Syndrome
- Severe Combined Immunodeficiency Disease (SCID)
- Oroticaciduria
- Purine Nucleoside Phosphorylase Deficiency

5. Metabolic disorders related to heme metabolism

- Porphyria's
- Hyperbilirubinemia
- Jaundice

6. Disorders related to Vitamins and Minerals

- Vitamin DeficiencyDiseases
- Minerals & Trace elements Deficiency Diseases

7. Clinical Enzymology

- Principles of Diagnostic Enzymology
- Isoenzymes and their role in clinical diagnosis
- Types of various enzymes in human body
- Functional & Non-Functional Enzymes
- Enzymes used as reagents and drugs

8. Clinical Nutrition

- Factors altering nutrition requirements in different conditions
- Nutritional assessment and support in health & convalescence
- Diseases that produce nutrition problems
- Protein Energy Malnutrition (PEM)

9. Single-Gene Disorders:

Major Modes of Inheritance (Autosomal Dominant, Autosomal Recessive, X-Linked Recessive)

10. Cytogenetics:

- Numerical chromosome abnormalities:
- Euploidy, Aneuploidy
- Structural chromosome abnormalities:
- Translocations, deletions
- Other chromosomal abnormalities:
- Inversions, Ring Chromosome, Isochromosome, Uniparental Disomy
- Advances in molecular cytogenetics:
- Fluorescence in situ hybridization (FISH), Spectral Karyotyping

11. Genetics of Common Diseases

Multifactorial inheritance

12. Gene Mapping

Different types of DNA Polymorphism

- Restriction Fragment Length Polymorphisms (RFLPs)
- Variable Number of Tandem Repeats (VNTRs)
- Short Tandem Repeat Polymorphisms (STRPs)
- Single Nucleotide Polymorphisms (SNPs)

13. Gene Mapping: Linkage Analysis

4. Genetic Diagnosis Recombinant DNA Technology

- Isolation of DNA from Blood
- Isolation of DNA from tissues

- RNA isolation from blood and tissues
- Restriction enzymes

Practical work:

(A) Basic biochemical practical

1. pH metery

- Principle of pH metery
- Components and working of pH meter
- Applications of pH metery in Biochemistry laboratory

2. Centrifugation

- Principle of Centrifugation
- Types of centrifuge machines
- Ultracentrifugation
- Uses in Biochemistry lab

3. Spectrophotometer and Photometry

- Spectrophotometry
- LFT's
- RFT's
- Lipid Profile
- Sugar
- Uric Acid
- Serum Bilirubin Direct / Indirect
- Serum Albumin A/G ratio

4. Elisa Based Test

- Principal of Elisa
- Thyroid Profile
- Hepatitis B & C (ICT & Elisa based)
- Cortisol

- HIV (ICT & Elisa based)

5. Urine Complete Examination

- pH, Specific gravity
- Albumin, Sugar, proteins
- Microscopy
- UPT

6. Specimen Collection & Processing; Sources of Biological variation:

- Sources & composition of blood specimen
- Types of blood specimen & equipment
- Venipuncture, skin puncture, arterial puncture, anticoagulants & preservatives of blood, hemolyzed sample
- Preanalytical considerations
- Capillary specimen collection
- Specimen handling & processing for testing
- Collection of urine, faces, spinal fluid, other fluids for analysis

7. Establishment and use of reference values

- Introduction to statistical terms & techniques
- Use of reference values

8. Quality assurance

Elements of quality assurance

Pharmacology:

1. **Cardiovascular system**

    a. Antihypertensive drugs

    b. Drugs for heart failure

    c. Antianginal drugs

d. Anticoagulants

2. Respiratory system

a. Anti-asthmatic drugs

b. Antihistamines

3. Central nervous system

a. General anesthetics

b. Local anesthetics

c. Antipsychotics

d. Antidepressants

4. Drugs acting on uterus

a. Tocolytic drugs

b. Drugs for labor and delivery

5. Endocrinology

a. Antidiabetic drugs

b. Estrogens and androgens

6. Chemotherapeutic drugs

a. Antibiotics of general use

GENERAL PATHOLOGY:

Cell as a unit of Disease

- The genome.

- Cellular metabolism & cellular activation.
- Signal transduction pathways, growth factors and receptors.
- Cell cycle and stem cell.

Cell injury and adaptation

- Reversible and Irreversible Injury
- Fatty change, Pigmentation, Pathological classification
- Necrosis and Gangrene

Cellular adaptation

- Atrophy, Hypertrophy,
- Hyperplasia, Metaplasia, Aplasia

Inflammation

- Acute inflammation, Vascular changes, Chemotaxis, Opsonization and Phagocytosis
- Enlist the cellular components and chemical mediators of acute inflammation
- Differentiate between exudates and transudate
- Chronic inflammation
- Etiological factors, Granuloma

Cell repair and wound healing

- Regeneration and Repair
- Healing---steps of wound healing by first and second intention
- Factors affecting healing

- Complications of wound healing

Hemodynamic disorders

- Define and classify the terms Edema, Hemorrhage, Thrombosis, Embolism, Infarction & Hyperemia
- Define and classify Shock with causes of each.
- Describe the compensatory mechanisms involved in shock
- Describe the pathogenesis and possible consequences of thrombosis
- Describe the difference between arterial and venous emboli

Neoplasia

- Dysplasia and Neoplasia
- Differences between benign and malignant neoplasm
- Enlist the common etiological factors of Neoplasia
- Define and discuss the different modes of metastasis
- TNM staging system and tumor grade

Immunity and Hypersensitivity

- Humoral and cell mediated immunity and types of Hypersensitivity with examples.

General Microbiology

- General Microbiology
- Introduction to microbiology
- Role of microbes in various human diseases
- Sources of infection

- Classification of microorganisms.
- Morphology and identification of bacteria.
- Bacterial metabolism and growth.
- Sterilization and disinfection, definition, use of physical and chemical disinfectants and their practicalutility in clinical practice.
- Infection and immunity pathogenicity, pathology of infection, Resistance and natural immunity, antigens and antibodies.

B: Specialty Specific:

7. Thyroid-1
8. Diabeties-2
9. Hyperlipedemia-1
10. Hypetension-2
11. Ischemic heart Diseae-1
12. Pneumonia-1
13. COPD-1
14. Asthma-1
15. Tuberculosis-2
16. Meningitis-1
17. CVA-1
18. Headache-1
19. Epilepsy-1
20. Dengue-1
21. Typhoid-1
22. Malaria-1
23. Hepatitis B& C
24. Cirrohsis and its complications-1

Part II-07 months-24months

Year 1	
Training component	**Duration**
Face to face / interactive sessions / Lectures	100 hours
Practical skills Training	60 hours
Rotations*	
Year 1 Rotations	
Family Medicine	8 weeks
Medicine	8 weeks
Pediatrics	8 weeks
Surgery **OR** Obstetrics and Gynecology	8 weeks
Emergency	4 weeks
Psychiatry	4 weeks
Mini Clinical Exercise (Mini CEx) per year	3
Case Based Discussions per year	3

Workshop in Year 1	**Duration**
Year 1	
Communication Skills	3 days
Laboratory and X-ray interpretation/Procedural skills	3 days
Initial Life Support	1 day

Year 2	
Training component	
Face to face / interactive sessions / Lectures	100 hours
Practical skills Training	60 hours

Rotations*	
Year 2 Rotations (Master of Family Medicine)	
Family Medicine	12 weeks
Medical Subspecialties$^{\Omega}$	16 weeks
Surgical Subspecialties$^{\Sigma}$	12 weeks
Mini Clinical Exercise (Mini CEx) per year	3
Case Based Discussions 3	

** HEC credit Hour system. Face to Face: 1:16 hours, Clinical: 1:48 hours, assignment: 1:16 hours.

Ω Medical Subspecialties (Cardiology, Pulmonology, gastroenterology, Rheumatology, Infectious Diseases, Psychiatry, Neurology). Any four.

∑ Surgical Subspecialties (Orthopedics, ENT, Eye, Urology)

$ Rotations and report writing in (Women health, vertical programs, mental health)

Workshops	Duration
Year 2	
Research methodology	3 days

PART II

A. Principles of Family Medicine

B. Communicable Diseases

C. Common Medical Problems

1. Cardiovascular Problems
2. Respiratory Problems
3. Endocrine Problems
4. Gastroenterological and Liver Problems
5. Neurological Problems
6. Dermatological Problems

D. Common Surgical Problems

1. General Surgical Problems
2. Musculoskeletal Problems
3. Ear Nose and Throat Problems
4. Genitourinary Problems
5. Eye Problems

E. Mother and Child Health

1. Pediatric Problems
2. Obstetrics and Gynecology

F. Mental Health Problems

G. Practical Skills

1. Communication Skills

2. Appropriate use of Clinical Equipment & Charts
3. Interpretations of Common Investigations
4. Focused Physical Examination
5. Orientation to research

Principles of Family Medicine

Learning Outcomes

By the end of this module, a learner will be able to:

1. Understand the principles and basics of Family Medicine
2. Demonstrate the understanding of person centered and holistic care
3. Communicate effectively with patients and their families
4. Act as advocate for the patient and appropriately coordinate his care
5. Bio-psycho-social approach of Family Medicine
6. Consider ethical issues involved in Family Practice

Topics

1. Family Medicine as a discipline
2. Practice management
3. Ethics
4. Documentation and Medical Records
5. Communication Skills
6. Evidence- Based Medicine
7. Prescribing in family practice
8. Clinical Audit
9. Professionalism
10. Palliative care
11. Care of elderly

Approach to Communicable Diseases

Learning Outcomes:

By the end of this module, each participant will be able to;

1. Diagnose and manage common infectious diseases
2. Identify potentially serious infections and arrange appropriate referral
3. Prescribe antibiotics rationally
4. Educate patients about prevention of common infections including vaccination

Topics

1. Approach to fever
2. Malaria
3. Typhoid
4. Tuberculosis
5. Animal bites
6. Insect bites and stings
7. Tetanus
8. Rabies
9. Sexually Transmitted Infections
10. Chicken pox and Herpes Zoster
11. Measles & Rubella
12. Mumps
13. Heminthiasis
14. Pandemic Flues
15. Viral Hemorrhagic Fevers
16. Vaccinations
17. Anaphylaxis

Cardiovascular Problems:

Learning Outcomes:

By the end of this module, each participant will be able to;

1. Diagnose and manage hypertension
2. Diagnose ischemic heart disease, provide immediate care and arrange safe referral
3. Diagnose chronic heart failure and provide long term care
4. Promote health and well-being
5. Suspect and diagnose congenital and acquired structural cardiac diseases and arrange referral
6. Suspect, diagnose and refer peripheral vascular diseases

Topics

1. Cardiovascular diseases risk assessment & prevention
2. Evaluation of chest pain (cardiac and non-cardiac)
3. Dyslipidaemia
4. Hypertension
5. Heart failure
6. Rheumatic heart disease
7. Obesity
8. Smoking
9. ECG interpretation

Neurological Problems:

Learning Outcomes:

By the end of this module, each participant will be able to;

1. Diagnose and manage common uncomplicated neurological problems like headache, neuropathies, seizures etc.
2. Identify potentially serious conditions and arrange appropriate referral

3. To be able to educate patients neurological conditions

Topics

1. Headache
2. Stroke & TIA
3. Seizure
4. Neuropathies
5. Movement and gait problems
6.

Endocrine Problems:

Learning Outcomes:

By the end of this module, each participant will be able to;

1. Diagnose and manage diabetes
2. Prevent development of diabetes in pre-diabetics
3. Prevent and manage complications of diabetes
4. Prescribe appropriate oral hypoglycaemic drugs
5. Diagnose and manage hypothyroidism
6. Diagnose and coordinate care for hyperthyroidism
7. Evaluate goiter and thyroiditis

Topics

1. Diabetes Mellitus
    a. Prevention
    b. Screening & diagnosis
    c. Non-pharmacological management
    d. Oral hypoglycemic drugs
    e. Insulin therapy
    f. Complications of diabetes
        i. Macro vascular
        ii. Micro vascular

g. Diabetic emergencies
    i. Hypoglycemia
    ii. Hyperglycemia (DKA, NKHOC)

2. Thyroid Disorders
    a. Goiter and thyroiditis
    b. Hypothyroidism
    c. Hyperthyroidism

Respiratory Problems:

Learning Outcomes:

By the end of this module, each participant will be able to;

1. Diagnose and manage common respiratory problems like asthma, COPD, pneumonia and bronchitis etc.
2. Identify patients needing referral to specilaist
3. Prescribe appropriate antibiotics in respiratory infections
4. Counsel patients about smoking and its cessation
5. Interpret chest x-rays and Pulmonary Function Tests (PFTs)

Topics

1. Asthma
2. Upper Respiratory Tract Infections
3. Community Acquired Pneumonia
4. Chronic Obstructive Pulmonary Disease
5. Approach to cough
6. Approach to shortness of breath including emergencies
7. Approach to hemoptysis
8. Tobacco smoking and cessation
9. Occupational lung diseases

Gastroenterological and Liver Problems:

Learning Outcomes:

By the end of this module, each participant will be able to;

1. Evaluate and manage dyspepsia in a cost effective way
2. Diagnose and manage and chronic diarrhoea
3. Prevent diarrhoea and other gut related infections
4. Identify patients needing referral to gastroenterologist
5. Evaluate jaundice and identify cause of jaundice
6. Diagnose and manage uncomplicated acute viral hepatitis

Topics

1. Constipation
2. Diarrhea
3. Dyspepsia including GERD, APD, Gall Bladder & pancreatic disease
4. Approach to nausea & vomiting
5. Irritable Bowel Syndrome
6. Inflammatory Bowel Disease
7. Hepatitis
8. Approach to GI bleeding

Dermatological Conditions

Learning Outcomes

By the end of this module, each participant will be able to;

1. Describe common skin lesions scientifically
2. Provide safe and effective symptomatic treatment
3. Diagnose and manage common skin infections and infestations
4. Diagnose and manage eczema and atopy
5. Educate patients about chronic skin conditions
6. Suspect systemic illnesses presenting as dermatological lesions

Topics

1. Childhood Exanthems
2. Acne
3. Scabies
4. Eczema &urticaria
5. Generalized itching
6. Bacterial infections
7. Viral infections
8. Fungal infections
9. Skin cancers
10. Psoriasis & other scaly lesions

General Surgical Problems

Learning Outcomes:

By the end of this module, each participant will be able to;

1. Start initial lifesaving treatment in acute surgical emergencies and trauma
2. Diagnose surgical conditions clinically in primary care setting
3. Screen high risk patients for malignancies
4. Educate patients about surgical problems

Topics

1. Abdominal pain
2. Blunt and penetrating trauma
3. Bleeding PR
4. Anal conditions
5. Evaluation of a lump
6. Head and neck swelling
7. Gall Bladder conditions
8. Pancreatic conditions
9. Hernia

Musculoskeletal Conditions

Learning Outcomes:

By the end of this module, each participant will be able to;

1. Diagnose and manage common non serious conditions of skeletal system
2. Initiate treatment for acute musculoskeletal emergencies
3. Interpret common radiological and laboratory investigations
4. Perform relevant and focused clinical examination
5. Choose appropriate non pharmacological treatment modality for musculoskeletal conditions
6. Prescribe appropriate medicines and supplements

Topics

1. Neck pain
2. Back pain
3. Spondyloarthropathies
4. Monoarthritis including Gout, Septic, Osteoarthritis
5. Polyarthritis including RA, Connective Tissue Diseases
6. Tenosynovitis syndromes
7. Generalized aches and pains
8. Vitamin D Deficiency Disorders
9. Osteoporosis

Ear. Nose and Throat

Learning Outcomes:

By the end of this module, each participant will be able to;

1. Diagnose and manage common non serious conditions of ENT
2. Initiate lifesaving treatment in emergencies
3. Educate patients about ENT conditions
4. Prescribe appropriate topical and systemic medicines
5. Prescribe antibiotics rationally

Topics

1. Ear conditions
2. Hearing loss and Tinnitus
3. Otitis Media
4. Nose conditions
5. Mouth and Throat conditions
6. Dizziness & vertigo
7. Head and neck swelling

Eye conditions

Learning Outcomes:

By the end of this module, each participant will be able to;

1. Diagnose and manage common non serious eye conditions
2. Initiate treatment in eye emergencies
3. Educate patients about vitamin A deficiency, its prevention and treatment

Topics

1. Red eye
2. Visual loss
3. Lumps around the eye
4. Vitamin A deficiency
5. Ophthalmianeonatorum

Genitourinary Problems

Learning Outcomes:

By the end of this module, each participant will be able to;

4. Diagnose and manage common non serious genitourinary conditions
5. Initiate treatment of genitourinary emergencies
6. Evaluate common genitourinary conditions clinically
7. Choose and interpret first line investigations for genitourinary problems
8. Educate patients about prevention of genitourinary problems

Topics

1. Hematuria
2. Nephropathy
3. Urinary Tract Infections
4. Urinary Tract Stones
5. Prostate problems
6. Scrotal problems
7. Ejaculatory problems
8. Erectile Dysfunction

Pediatric Problems

Learning Outcomes:

By the end of this module, each participant will be able to;

1. Diagnose and manage common paediatric problems as per IMCI guidelines
2. Perform comprehensive paediatrics health screening assessments
3. Identify mental health issues in children and arrange appropriate referral
4. Educate parents about wellbeing of children
5. Provide nutritional counselling to parents

Topics

1. Periodic Health Examination of children
2. Integrated Management of Childhood Illnesses (IMCI)
3. Acute Respiratory Infections (ARI)
4. Diarrhea
5. Malnutrition
6. Enuresis
7. Nutrition
8. Vaccination

Obstetrics and Gynecological Problems

Learning Outcomes

By the end of this module, each participant will be able to;

1. Offer antenatal care for the mother
2. Diagnose and manage common antenatal and postnatal problems
3. Offer contraceptive advice to women of child bearing age
4. Safely manage common medical problems during pregnancy
5. Manage common menstrual problems including menopause
6. Screen for gynaecological cancers
7. Diagnose and manage common gynaecological infections
8. Initiate the evaluation of a couple for infirtility

Topics

1. Vaginal discharge
2. Menstrual Disorders
3. Dysmenorrhea
4. Premenstrual syndrome
5. Menopause
6. Contraception
7. Infertility
8. Poly Cystic Ovarian Syndrome (PCOS)
9. Evaluation of breast lump
10. Cervical and Breast screening

Mental Health Problems

Learning Outcomes:

By the end of this module, each participant will be able to;

1. Diagnose and manage depression and anxiety in primary care
2. Identify tendency of self-harm and refer promptly
3. Prescribe antidepressants appropriately
4. Choose appropriate non-pharmacological interventions

Topics

1. Anxiety Disorders
2. Mood disorders
3. Somatization disorders
4. Grief
5. Insomnia
6. Psychosis
7. Psychotherapy/Counseling
8. Childhood psychiatric conditions including Autism & ADHD
9. Adolescent mental health and behavioral problems
10. Substance abuse
11. Stress management

Teaching Methods:

1. Classroom Lectures as part of the scheduled lectures and recorded videos.
2. Supervised practicum. The practicum will provide an opportunity for participants to integrate and apply knowledge and skills from coursework to perform a systematic review of literature in their own fields of interest under supervision of the faculty.
3. Rotation: 4 weeks rotating in psychiatric OPDs and psychological services

Communication Skills

Learning Outcomes

By the end of this module, each participant will be able to;

1. Effectively communicate patients and families in history taking, examination and management
2. Effectively counsel patients on common life style and preventive health related issues
3. Effectively deal with difficult patients
4. Effectively break bad news to patients and families

Topics

1. Consultation skills
2. Exploring ideas, concerns, expectations and hidden agenda
3. Counselling
4. Breaking Bad News
5. Dealing with angry patients

Use of Clinical Equipment and Charts

Learning Outcomes

By the end of this module, each participant will be able to;

1. To use clinical equipment competently
2. To use bed side monitoring tools appropriately
3. To interpret common clinical charts

Topics

1. Clinical charts; growth, CVD risk assessment, Lung functions, visual acuity, colour vision
2. Equipment; Tongue Depressor, Torch, stethoscope, sphygmomanometer, tendon hammer, tuning forks, Otoscope, ophthalmoscope, measuring tape, weighing scales, height bars, nasal speculum, vaginal speculum, proctoscope,
3. Machines; Nebulizer, oxygen cylinder, peak flow, spacer device, glucometer, Oxygen saturation monitor

Interpretations of Common Investigations

Learning Outcomes

By the end of this module, each participant will be able to;

1. Know the diagnostic tests currently available in primary care
2. Appropriately select appropriate test for diagnosis and monitoring
3. Able to interpret laboratory investigations, ECG and X-rays

Topics

1. Hematology; CBC, ESR, Blood Indices, RDW, Reticulocyte count, MP, PT, APTT, Hb electrophoresis, Ferritin
2. Biochemistry & microbiology; Sugars, HbA1c, Lipid profile, LFT, BUN, Creatinine, Electrolyte, Tumor markers, Thyroid function tests, Uric Acid, RA factor, Anti CCP, ANA, Anti DNA, CPK, Cardiac Enzymes, Hepatitis markers, gram stain, VDRL, Anti Treponemal Antibodies, HIV screening and confirmation, sputum smear, Gene-Xpert
3. Histopathology; Pap smear
4. X-rays; Chest, limbs, joints, spine, abdomen, paranasal sinuses, nasopharynx, KUB
5. ECG; Normal, AV blocks, arrhythmias, ischemic changes
6. PFTs; Normal, restrictive, obstructive and mixed pattern

Focused Physical Examination

Learning Outcomes

By the end of this module, each participant will be able to;

1. Perform physical examination with correct technique
2. Perform focused physical examination according to symptoms
3. Learn the ethics during physical examination

Topics

1. General physical examination
2. Vital signs
3. Cardiovascular system
4. Respiratory system
5. Abdomen including rectal and genitalia
6. Breast
7. Musculoskeletal system including spine
8. Nervous system
9. Ear, nose and throat
10. Eye
11. Integrated examination

Orientation to Research

Learning Outcomes

By the end of this module, each participant will be able to;

1. Develop basic understanding of research types
2. Develop basic understanding of research methodology
3. Understand the selection of suitable research design
4. Understand the basics of data collection
5. Understand research software packages for analyzing research data
6. Understand the basics of report writing and writing research proposals

Topics

12. What is research
13. Research problem
14. Generating hypothesis
15. Types of research
16. Selecting appropriate research type
17. Research methodology
18. Data collection and analysis
19. Report writing

Section E:

Assessment Plan:

Program duration	Course contents	Assessment method
At the end of 6 months of program	Basic medical sciences: • Anatomy including histology • Physiology • Biochemistry • Pathology • Pharmacology • Specialty specific =25% } 75%	**Part I** to be taken by university. It will include: Written (MCQ)=100(1 each) **Total Marks =100**
At the end of 2nd year	Specialized training in the relevant Department	**Part II Examination** to be conducted by university. It will include: **A) Paper A** MCQ=50(1 each)=50 SEQ=10 (5 each)=50 **Total Marks=100** **B) Paper B** MCQ=50(1 each)=50 SEQ=10 (5 each)=50 **Total Marks=100** **C) Log Book=20 Marks** **D) Clinical Paper=180** OSCE/OSPE =90 marks Clinical=90 marks 1 long case=60 Total = 60 marks Short cases= 2 each caring 15 marks Total = 30 marks **Total Marks=400**

Examinations

All candidates admitted in DIPLOMA IN FAMILY MEDICINE shall appear in all internal and final exams.

Eligibility Criteria:

The candidates appearing in final examination are required

a) To have passed previous examination.
b) To have appeared and achieved at least 60% marks in internal assessments.
c) To have submitted evidence of payment of examination Fee
d) Examination Schedule

e) There will be a minimum period of 20 days between submission of application for the examination and the conduction of examination.
f) Examination fee will be determined periodically by the University.
g) The examination fee once deposited cannot be refunded / carried over to the next examination under any circumstances.
h) The Controller of Examinations will issue Roll Number Slips on receipt of prescribed application form, documents satisfying eligibility criteria and evidence of payment of examination fee.

Declaration of Result

- ✓ The Candidate will have to score 60% marks in written to be declared successful in the Examination.
- ✓ A maximum total of SIX consecutive attempts (availed or unavailed) will be allowed in the EXAMINATION.
- ✓ If the candidate fails to pass this Examination within the above mentioned limit of six attempts ,the candidate shall be removed from the program, and the seat would fall vacant.

Eligibility Criteria for Diploma in Family medicine
PART-IIEXAMINATION:

i) To appear in the Diploma PART-II Examination the candidate shall be required:

j) To have submitted the result of previous DIP PART-I examination.
k) To have achieved accumulative score of 60% in Continuous Internal assessments.
l) To have submitted no dues certificate from all relevant departments including library, cashier etc.
m) To have submitted evidence of submission of examination fee.

Examination Fee

- ✓ Examination fee will be determined and varied at periodic intervals by the University.
- ✓ The examination fee once deposited cannot be refunded/carried over to the next examination under any circumstances.
- ✓ The Controller of Examinations will issue an Admittance Card with a photograph of the candidate on receipt of prescribed application form, documents satisfying eligibility criteria and evidence of
- ✓ payment of examination fee. This card will also show the Roll Number, date/time and venue of examination.

Written Part of Final Examination

n) The written examination will consist of single best answer type Multiple Choice Questions (MCQs) and Short Essay Questions (SEQs), with each MCQ carrying1 mark and each SEQ for 5 marks
o) The candidates securing a score of 60% marks in multiple choice question paper and short essay question paper will pass the written part of the final examination.
p) The candidate has to pass the oral and practical part of the examination individually. If she/he fails in any segment of examination, he/she has to re-sit in the total examination next time.

Clinical and TOACS/VIVA

a) A panel of two examiners will be appointed by the Controller of Examination and of these one will be from the university whilst the other will be the external examiners.
b) Internal examiner will act as a coordinator. In case of difficulty in finding an Internal examiner in a given subject, the Controller of Examination would, in consultation with the concerned Deans, appoint any relevant person with appropriate qualification and experience, outside the University as an examiner.
c) The candidates scoring 60% marks in each component of the Clinical & Oral

Examination will pass this part of the Final Examination

Declaration of Result

For the declaration of result

a) The candidate must have passed the final written examination with 60% marks & the viva examination securing 60% marks for each semester. The cumulative passing score from the written and clinical/oral examination shall be 60%.
b) The Dip. DEGREE shall be awarded after success in the Diploma in Diabetes and Endocrine PART-II examination (written& viva).
c) On completion of stipulated training period, irrespective of the result (pass or fail) the training slot of the candidate shall be declared vacant.

Award ofDIPLOMAINFAMILY MEDICINE

Examination

PART-I

written

• General Pathology	(8 MCQs)
• General anatomy & Histology	(20 MCQs)
• Basic Biochemistry	(20 MCQs)
• General pharmacology	(7 MCQs)
• General physiology	(20 MCQs)
• Subject specific	(25 MCQs)
MCQ Paper	100OneBestType
Total Marks	**100Marks**

A) Paper A
MCQ=50(1 each)=50
SEQ=10 (5 each)=50
Total Marks=100

B) Paper B
MCQ=50(1 each)=50
SEQ=10 (5 each)=50
Total Marks=100

C) Log Book=20 Marks

D) Clinical Paper=180
OSCE/OSPE =90 marks
Clinical=90 marks

1 long case=60

Total = 60 marks

Short cases= 2
each caring 15 marks
Total = 30 marks

Total Marks=400

Section F:

Award of Diploma in Family medicine

A candidate having declared successful in all the components of examination i.**e.** shall be declared pass and shall be conferred diplomafamily medicine

Section G:

Log Book

As per format approved by the university

Section H:

Table of Specification:

Diploma in Family medicine part 1:

Sr No.	Topic	MCQs
1.	General Pathology	13
2.	General Anatomy and Histology	25
3.	Basic Biochemistry	25
4.	General Pharmacology	12
5.	General Physiology	25
	Total	100 Marks

Diploma in Family medicine PART-II

Theory		
Paper I 10 SEQs (No Choice) 50 MCQs	**100 marks** 50 50	**3 Hours**
Paper II 10 SEQs (No Choice) 50 MCQs	**100 marks** 50 50	**3 Hours**

Section I:

Resources and references (books and other resource material)

A. BOOKS:

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B. JOURNALS:

Section J:

List of authors and contributors

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