

**NATIONAL POSTGRADUATE MEDICAL COLLEGE OF  
NIGERIA**

**FACULTY OF INTERNAL MEDICINE**



**FELLOWSHIP PROGRAMME  
2016**

**CURRICULUM FOR THE JUNIOR RESIDENCY TRAINING**

## TABLE OF CONTENTS

1. INTRODUCTION 3
  - 1.1 Authority 3
  - 1.2 Vision and Mission of the College 3
  - 1.3 Vision of the Faculty 3
  - 1.4 Philosophy 3
  - 1.5 Objectives of training 4
  - 1.6 Structure and Mode of Instructions 4
  - 1.7 Training centres 4
  - 1.8 Admission requirements 4
  - 1.9 Registration as Associate Fellow 4
  
2. JUNIOR RESIDENCY (PART 1 FMCP) 4
  - 2.1 Introduction 4
  - 2.2 Goals, Objectives and Outcome of Junior Residency 5
  - 2.3 Training format of Junior Residency 5
  - 2.4 Syllabus for Junior Residency with Tables of Contents for sub-specialty rotations 7
  - 2.5 Assessment 59
    - 2.5.1 Formative 59
    - 2.5.2 Summative 59
      - a) Entry requirements for examination 59
      - b) Structure of the part 1 FMCP examination 60
      - c) Conditions for a pass 58
  - 3.0 Appendices 61
    - I Training and Examination for Primary FMCP 61
    - II Curriculum development/review procedure 62
    - III Course credit weighing of syllabus 63
    - IV Annual evaluation form 64

## **1.0 INTRODUCTION**

The National Postgraduate Medical College of Nigeria started as a fellowship programme in 1970 under the Nigerian Medical Council. This transmuted in 1979 through the promulgation of Decree 67, establishing the National Postgraduate Medical College of Nigeria (NPMCN). This was the premier medical academic cum professional programme in sub-Saharan Africa. The programme is unique in combining academic and professional training in medical postgraduate courses. The programme in Medicine was termed a Fellowship in Physic. The acronym, FMCP (Fellow of Medical College in Physic) has remained.

### **1.1 Authority**

Decree 67 of 1979 setting up the Postgraduate Medical College empowers faculties to conduct Examinations and certify candidates to be holders of the FMCP under the direction of the College. Section 106 of the decree 67 stipulates that a candidate offering himself or herself for the series of Examinations for the fellowship of the Faculty shall satisfy the Faculty board, that he/she is in possession of and is therein named as a holder of a certificate from an institution recognized by the College showing that he/she has satisfactorily attended the prescribed period.

### **1.2 Vision and Mission of the College**

#### **Vision statement**

The National Postgraduate Medical College of Nigeria aims to produce medical and dental specialists of the highest standards who will provide world class services in teaching research and health care.

#### **Mission statement**

The mission of the college is to plan, implement, monitor and evaluate postgraduate programmes required to produce medical and dental specialists of the highest quality, competence and dedication who will provide teaching and optimal healthcare for the people. Lifelong learning will be maintained by continuing professional development programmes of the college.

### **1.3 Vision Statement of the Faculty**

The Faculty of Internal Medicine of the National Postgraduate Medical College of Nigeria aims to produce physicians of the highest standards in the various subspecialties who will provide world class services in teaching, research and health care.

### **1.4 Philosophy of the Fellowship Programme in Internal Medicine**

The Faculty of Internal Medicine recognizes the universality of Medicine and the need for lifelong learning for practicing Physicians. Therefore physicians certified by the Faculty must be adequate in knowledge, skills and attitude to practice Medicine in Nigeria and be able to adapt to practice anywhere in the world and be of good character. In addition, the certified specialist Internist should possess management skills to lead the health team, offer humane and ethical clinical services. In addition he/she should be able to assume other higher administrative and leadership responsibilities/roles.

### **1.5 Objectives of the Training Programme**

1. To train physicians capable of integrating clinical practice with effective teaching and basic clinical research.
2. To educate and mentor physicians to maintain their commitment to the profession.
3. To train physicians to be committed to innovations and research, ethical conduct, lifelong learning and professionalism including evidence based and telemedicine
4. To equip the physicians with knowledge and skills to prepare them for higher roles in medical practice, training and administration.
5. To train physicians who will be able to exhibit appropriate communication skills and attitudes in relating to members of the health team and patients/relatives.

### **1.6 Structure and Mode of Instruction**

This is a staggered, supervised training of minimum of 6 years, leading to the primary, Part I and Part II (final) FMCP examinations.

Mode of instructions consists of lectures, tutorials, seminar presentations, skills acquisition (ward/grand rounds, clinics and clinical drills), case presentation, update courses and dissertation driven by strong mentorship.

### **1.7 Training Centers**

Training is undertaken in an accredited institution, the updated list of which is available from the college web site ([www.npmcn.edu.ng](http://www.npmcn.edu.ng)).

### **1.8 Admission Requirements**

To be admitted into the programme, the applicant must have passed or be exempted from the primary examination of the National Postgraduate Medical College of Nigeria in Internal Medicine and be employed/affiliated with an accredited institution.

### **1.9 Registration as Associate Fellow**

The trainee is required to register as an associate fellow after passing or exemption from the primary FMCP examination and has secured a placement in an accredited training centre.

## **2.0 JUNIOR RESIDENCY FOR THE FMCP**

### **2.1 Introduction**

Junior Residency is a critical stage of the FMCP Programme. At this stage the trainee physician is prepared to take on the calling and philosophy of an internist. This period must be spent in accredited training institutions which offer a variety of subspecialist services in a number of disciplines both in internal medicine and related specialties.

Successful completion and certification qualifies the candidate to progress to senior residency position in a subspecialty or general internal medicine.

### **2.2 Goals, Objectives and Outcome of Junior Residency**

#### **2.2.1 Goals**

The FCMP Junior Residency programme aims to ensure that

1. The trainee physician acquires adequate knowledge, skills, attitudes and behavior essential for the practice of internal medicine.
2. The trainee physician is prepared for lifelong learning, research, and evidence based medical practice.
3. The trainee physician acquires teaching skills

#### **2.2.2 Objectives**

At the end of the junior residency, the trainee is expected

1. To demonstrate competence in the diagnosis of prevalent and important medical conditions.
2. To initiate and monitor rational pharmacologic and non-pharmacologic treatment.
3. To demonstrate competence in resuscitation and management of critically ill patients and acute medical emergencies.
4. To demonstrate knowledge, skills, attitudes and conduct appropriate for the level of training in patient management.
5. To audit all aspects of patient care, and apply the outcome in maintaining standards and improving quality of care.
6. To communicate effectively with patients, patients' relations, colleagues, other health personnel, hospital authorities and the general public.
7. To demonstrate the ability to effectively impart the skills and knowledge acquired to other doctors, medical students, and allied health professionals.
8. To educate patients, their caregivers and the community on holistic health care.
9. To demonstrate effective leadership and management skills.
10. To demonstrate appropriate level of competence in medical writing and appraisal of medical literature.

### **2.3 Training Format of Junior Residency(See also summery of rotations under appendix III)**

The Junior Residency training programme shall last a minimum of 24 months exclusive of leave periods. During this period, the resident shall spend a minimum of three months each in any 6 of the following subspecialties (Totaling 18 months):

1. Cardiology
2. Endocrinology, Diabetes and Metabolism
3. Dermatology and Genitourinary medicine
4. Gastroenterology
5. Nephrology
6. Neurology
7. Respiratory Medicine

### **2.3.1 Elective Posting**

The resident is expected to spend one month in any of the following specialties

1. Clinical Haematology/Medical Oncology
2. Infectious disease/HIV Medicine
3. Clinical Pharmacology & Therapeutics
4. Critical Care/Intensive care medicine
5. Rheumatology
6. Geriatric medicine

### **2.3.2 Mandatory Posting**

1. Accident and Emergency medicine.

Residents are expected to spend One month in the accident and emergency.

This is WITHOUT PREJUDICE to the calls they are expected to take THROUGHOUT the residency training.

### **2.3.3 Postings in Allied Disciplines**

During the 24 month training period, the trainee shall have a four-month compulsory rotation in other departments relevant to the practice of internal medicine as follows:

- a. Radiology – one month – during which the candidate would interpret plain films and participate in contrast studies and other imaging techniques relevant to the discipline.
- b. Psychiatry – one month – during which the candidate shall be exposed to recognition and management of acute Psychosis, organic brain syndrome, psychosomatic illnesses, psychiatric manifestation of systemic diseases and other psychiatric conditions relevant to the practice of medicine.
- c. Laboratory medicine – two months – divided into two weeks each in the departments of:
  - i. Haematology and Blood transfusion
  - ii. Chemical Pathology
  - iii. Microbiology and Parasitology and

iv. Pathology (Morbid Anatomy)

#### **2.3.4 Procedures and Case Report**

While doing the subspecialties rotations, the trainee should perform/ participate in the procedures prescribed in section 2 of this curriculum and the log book, for which he/she should be signed up by the Consultants in the subspecialty. The trainee is expected to have performed/participated in the minimum number prescribed for each procedure at the end of the training period and before presenting himself or herself for the part I examination.

During each subspecialty rotation, the trainee should write-up and present three (3) case reports (with brief literature review) and be graded and signed up by the consultant-in-charge of the patient. This is in any 6 of the subspecialties listed in Section 2.3 above.

During Laboratory Medicine rotation, the trainee shall participate in laboratory procedures relevant to Internal Medicine and have an in-depth understanding of the interpretation of the results and common errors of determination. The candidates should be signed up by the supervising consultant.

#### **2.4 Syllabus for Junior Residency and Course credit weighting**

The syllabus for this part covers all diseases in all sub-specialties of internal medicine. It is expected that candidates must be proficient in the performance of specialty-oriented skills and procedures listed and be signed up for these in the logbook, (obtainable from the Faculty Secretary or College Registrar). The topics covered in standard postgraduate medical textbooks in Internal medicine as well as standard texts in tropical medicine are recommended for comprehensive coverage. This should be supplemented by sources of current updates.

The Tables of Contents arranged by sub-specialties provide the details with regards to contact hours, percentage coverage of course content, learning objectives, credit units and modes of delivery. The levels of competence desired are divided into three:

Level I is mainly knowledge

Level II involves comprehension and application of knowledge

Level III is a combination of analysis, synthesis and evaluation.

This syllabus is weighted in accordance with standard definition of credit units for the college of medicine - details as shown in appendix III. The trainee is expected to acquire a minimum of 167 credit units in the 24 months period of junior residency.

##### **2.4.1 General Knowledge and Skills:**

- Good medical practice and clinical care including history and physical examination.
- Effective communication with patients, relations, colleagues, public, etc.
- Care of the terminally ill.

##### **2.4.2 Attitudes and conduct – this requires good mentorship at all levels of training.**

- Professional, ethical confidentiality and medical-legal and other related issues involved in teaching, training, self/long-term learning and research.
- Acquisition of leadership skills, effective time management, admissions and discharges
- Learn to work with peers, seniors, juniors and other cadres of staff.
- Proper carriage, comportment and descent/ respectable dressing.





Cardiovascular emergencies	Cardio-pulmonary resuscitation ('ABCD'), shock – cardiogenic shock and circulatory collapse, acute pulmonary oedema, cardiac tamponade, malignant arrhythmias, hypertensive emergencies, dissecting aneurysms, myocardial infarction, pulmonary embolism	20%	Level 3	4	1,2,3, 4, 5, 6, & 7	OSCE MCQ Essay Clinical Presentation
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Mode of delivery code: Lectures (1), Tutorials (2), Seminars (3), Clinicals/practicals (4), Self-directed learning (5), Assignments (6), Conferences (7)

2.4.4 ENDOCRINOLOGY, DIABETES AND METABOLISM

THEME	SPECIFIC TOPICS, KNOWLEDGE, ATTITUDES, AND SKILLS	% OF COURSE	LEARNING OBJECTIVES USING TAXONOMY	MODE OF DELIVERY	METHOD OF ASSESSMENT	TOTAL CREDITS UNITS
<b>DOMAIN: 1. ENDOCRINOLOGY</b>		40%	FORM/SUM			
BASIC CONCEPT	Basic medical scientific aspects of endocrinology Knowledge : <ul style="list-style-type: none"> <li>• Ability to describe anatomy and physiology of the HPAxis,</li> <li>• Mechanism of action of peptide and steroid hormones.</li> <li>• To describe negative feedback mechanism, diurnal rhythms</li> <li>• Compare the basic dynamic endocrine tests</li> </ul>		Level 1& 2	Lect Tutorial Sem Self-directed learning; bedside teach	CBD MCEX DOPS Mcqs Essays Assignm Log book OSCE	1
ENDOCRINE GLANDS AND ENDOCRINOPATHIES						
DISORDERS OF THE HYPOTHALAMUS AND PITUITARY DISORDERS	Acromegaly Short stature Hyperprolactinemia Hypopituitarism Diabetes Insipidus Knowledge: Ability to <ul style="list-style-type: none"> <li>• Describe Clinical features of the above disorders</li> <li>• The discuss Pathophysiology</li> <li>• Discuss Differential diagnosis</li> <li>• List types of Laboratory tests</li> <li>• Ability to interpret lab diagnosis</li> <li>• Ability to make a diagnosis</li> <li>• Discuss the treatment</li> </ul> Skills <ul style="list-style-type: none"> <li>• To take anthropometric measurements</li> <li>• To perform visual field assessment clinically</li> <li>• To request the appropriate investigation for each of the disease</li> </ul>		Level 1,2,3		CBD MCEX DOPS Mcqs Essays Assignm Log book OSCE	1

	<ul style="list-style-type: none"> <li>• Ability to interpret the CT of the skull</li> <li>• To demonstrate the physical signs of the listed disorders</li> </ul> <p>Attitudes:</p> <ul style="list-style-type: none"> <li>• Need to recognize the multidisciplinary approach to management and when to refer</li> </ul>					
THYROID DISORDERS	<p>Basic : Ability to describe anatomy of the thyroid gland</p> <p>Discuss the regulation of the HPT axis (Thyroid function)</p> <p>Biosynthesis of thyroid hormone</p> <p>Disorders of physiology and biochemistry of thyroid hormones and TSH and Iodine metabolism</p> <p>Knowledge</p> <ul style="list-style-type: none"> <li>• List types of thyroid hormone</li> <li>• Describe thyroid hormone synthesis including iodine metabolism</li> </ul> <p>Thyrotoxicosis Hypothyroidism Thyroiditis Thyroid cancers</p> <p>Knowledge:</p> <ul style="list-style-type: none"> <li>• List the disorders of the thyroid gland</li> <li>• Ability to list S&amp;S of the thyroid disorders above</li> <li>• List types of tests for evaluating thyroid disease</li> <li>• To interpret TFT</li> <li>• Compare and contrast thyrotoxicosis due to Graves' disease and</li> </ul>		LEVEL 1,2,3		<p>CBD MCEX DOPS Mcqs Essays Assignm Log book OSCE</p>	3

	<p>Toxic Nodular goitre</p> <ul style="list-style-type: none"> <li>• Ability to make a diagnosis of the above thyroid disorders</li> <li>• To describe the radioiodine process and interpret the results</li> <li>• Discuss the effect of pregnancy on thyroid function and their interpretation</li> </ul> <p>Skills:</p> <ul style="list-style-type: none"> <li>• To request the appropriate TFT in a given patient</li> <li>• To demonstrate the physical signs of the listed disorders</li> <li>• Ability to manage the above conditions</li> </ul> <p>Attitude</p> <ul style="list-style-type: none"> <li>• To recognize when to refer the above conditions</li> <li>• Ability to recognize the duration of treatment</li> <li>• Recognize the need to monitor</li> <li>• Recognize the need to report to seniors</li> </ul>					
ADRENAL GLAND DISODERS	<p>Basic : Ability to describe anatomy physiology of the adrenal gland</p> <p>Discuss the regulation of the HPA axis</p> <p>Describe the Biosynthesis of corticosteroids hormone</p> <p>Disorders of physiology and biochemistry of Adrenal disorders including regulation of Na and K</p> <p>Cushing's disease Conn syndrome CAH Adrenocortical failure Pheochromocytoma Electrolyte imbalance Knowledge</p> <ul style="list-style-type: none"> <li>• Describe the</li> </ul>		LEVEL 1, 2,3		<p>CBD MCEX DOPS Mcqs Essays Assignm Log book OSCE</p>	2

	<p>metabolism of catecholamines including urinary metabolites</p> <ul style="list-style-type: none"> <li>• Describe the test for evaluation of adrenocortical and adreno medulla disorder</li> <li>• Discuss the endocrine hypertension</li> <li>• Discuss and interpret the procedure of basal and dynamic test in the evaluation of the above conditions</li> </ul> <p>Skills</p> <ul style="list-style-type: none"> <li>• To request the appropriate tests in a given patient</li> <li>• To demonstrate the physical signs of the listed disorders</li> <li>• To be able to distinguish simple obesity from Cushing's syndrome</li> <li>• Ability to manage the above conditions</li> <li>• To perform and interpret Dexamethasone suppression and ACTH stimulation test</li> <li>• Ability to diagnose and manage</li> </ul> <p>Attitudes</p> <ul style="list-style-type: none"> <li>• Recognize need to report to seniors</li> <li>• Ability to recognize the duration of treatment</li> <li>• Recognize the need to monitor treatment</li> <li>• Recognize the need to teach patients life-saving skills</li> <li>• Ability to deliver patient education</li> </ul>					
BONE AND CALCIUM METABOLISM	<p>Basic: Ability to describe histology and biology of bone Regulation of calcium metabolism</p> <p>Hyperparathyroidism/Hyp</p>		LEVEL 1,2,3			1

	<p>ercalcemia</p> <p>Hypoparathyroidism/ Hypocalcaemia Disorders of Vitamin D Bone disorders – Paget, osteomalacia, Osteoporosis</p> <p>Knowledge</p> <ul style="list-style-type: none"> <li>• Describe the test for evaluation of calcium and BMD and FRAX</li> <li>• To determine corrected calcium level</li> </ul> <p>Skills</p> <ul style="list-style-type: none"> <li>• Ability to diagnose and manage the above conditions</li> <li>• To demonstrate the physical signs of the listed disorders</li> <li>• To be able to distinguish osteomalacia and Osteoporosis</li> </ul> <p>Attitude</p> <ul style="list-style-type: none"> <li>• To recognize when to refer the above conditions</li> <li>• Ability to recognize the duration of treatment</li> <li>• Recognize the need to monitor</li> <li>• Recognize the need to report to seniors</li> </ul>					
Gonadal disorders	<p>Regulation of the Pituitary gonadal axis Ovarian and testicular Male hypogonadism Female infertility ED Ovarian disorders: Polycystic ovarian disease Turner's syndrome</p> <p>Knowledge</p> <ul style="list-style-type: none"> <li>• Discuss the pathophysiology of these disease conditions</li> <li>• List the clinical features of the above conditions</li> <li>• Discuss the differential diagnosis of the above conditions</li> <li>• List the investigations</li> </ul>					1

	<p>and their interpretation</p> <ul style="list-style-type: none"> <li>• Discuss the management of each of them</li> </ul> <p>SKILLS</p> <ul style="list-style-type: none"> <li>• Ability to request for appropriate tests and interpret the results</li> <li>• Ability to measure and interpret the anthropometric measure</li> <li>• Ability to manage the above conditions</li> </ul> <p>Attitude</p> <ul style="list-style-type: none"> <li>• Recognize the role of the Endocrinologist in the management of these conditions</li> <li>• To recognize when to refer the above conditions</li> <li>• Recognize need to report to seniors</li> <li>• Recognize the multidisciplinary treat approach</li> </ul>					
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**DOMAIN: 2. DIABETES MELLITUS AND PANCREAS 30%**

<p>The Scientific foundations for the Management of diabetes mellitus</p> <p>Diagnosis and general management of diabetes mellitus</p> <p>Acute Complications of DM</p> <p>Management of Patients with Diabetes during Acute Illness or Surgery</p> <p>Pregnancy in Diabetes Mellitus Diabetes in the Older Adult</p> <p>Chronic</p>	<p>Knowledge:</p> <ul style="list-style-type: none"> <li>• Describe the anatomy and physiology of the endocrine pancreas</li> <li>• Carbohydrate metabolism including role of Endocrine pancreas and the Incretins</li> <li>• Describe and classify carbohydrate intolerance using WHO classification</li> <li>• Discuss the aetiopathogenesis and pathophysiology of T1 and T2 DM</li> <li>• To compare T1 and T2 DM</li> <li>• To describe the clinical features of DM</li> <li>• The principles of lifestyle management</li> </ul>		LEVEL 1,2,3		<p>CBD MCEX DOPS Mcqs Essays Assignm Log book OSCE</p>	6
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<p>Complications of Diabetes</p>	<ul style="list-style-type: none"> <li>• Discuss the characteristics of the injectables and non-injectable blood glucose lowering agents</li> <li>• Describe the monitoring of DM control</li> <li>• Discuss the component of Metabolic syndrome relate the treatment of types of diabetes to the</li> </ul> <p>Skills:</p> <ul style="list-style-type: none"> <li>• Be able to elucidate an appropriate history and interpret tests done to differentiate different types of diabetes</li> <li>• To perform urinalysis and 24hr urine collection</li> <li>• Educate patients in the use of injectables especially insulin delivery devices including syringes, pens</li> <li>• Educate patients in the use of self-blood glucose monitoring systems</li> <li>• Educating patients on injectables in type 2 diabetes</li> </ul> <p>Attitudes</p> <ul style="list-style-type: none"> <li>• To recognize the implications and concerns arising from a diagnosis of diabetes and provide advice appropriately</li> <li>• To recognize the importance of team management</li> <li>• To recognize the</li> </ul>					
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	<p>misconception of myths as a barrier to management</p> <ul style="list-style-type: none"> <li>To recognize the central role of the patient and their active participation in the team management of their diabetes</li> </ul> <p>Macrovascular Disease Complications in diabetes Microvascular Chronic Complications of Diabetes Foot Disease Problems in People With Diabetes Mellitus</p>					
<b>DOMAIN: 3. METABOLIC DISORDERS 7.5%</b>						
DISORDER OF PURINE AND PYRIMIDINE METABOLISM (Including uric acid disorders)	<p>Knowledge</p> <ul style="list-style-type: none"> <li>Describe the pathophysiology of hyperuricemia and the disease condition associated with it</li> <li>Describe the clinical presentation</li> <li>Describe the methods of treatment of hyperuricemia and associated diseases</li> </ul>					<p>CBD MCEX DOPS Mcqs Essays Assignm Log book OSCE</p> <p>1</p>
HEAM METABOLISM (Porphyria)	<p>Knowledge</p> <ul style="list-style-type: none"> <li>Describe the pathophysiology of the condition</li> <li>List the main clinical features and the differential diagnosis of the condition</li> <li>Recognize the presentation of these disease</li> </ul>					
STORAGE DISEASE (Glycogen and Lipid Storage)	<p>Knowledge</p> <ul style="list-style-type: none"> <li>Describe the pathophysiology of the condition</li> <li>List the different main types</li> <li>List the different ways the condition may present</li> </ul>					
LIPID DISORDERS (Dyslipidaemia)	<p>Knowledge</p> <ul style="list-style-type: none"> <li>Basic knowledge of lipid metabolism</li> </ul>					

<p>ELECTROLYTES DISORDERS (hypo Na, hyper Na, HypoK, Hyper K</p>	<ul style="list-style-type: none"> <li>• Classify primary condition</li> <li>• List the conditions associated with secondary dyslipidemia</li> <li>• Describe its role in DM, heart disease, metabolic syndrome and ischemic heart disease</li> </ul> <p>Knowledge</p> <ul style="list-style-type: none"> <li>• List the causes</li> <li>• Describe the presentations</li> <li>• Discuss the pathophysiology</li> <li>• Describe the investigations</li> <li>• Discuss the differential diagnosis</li> <li>• Discuss the management</li> </ul> <p>Skills</p> <ul style="list-style-type: none"> <li>• Ability to select the right tests</li> <li>• Ability to make a clinical diagnosis</li> <li>• Ability to manage and initiate treatment of the above metabolic conditions in its acute and chronic form</li> <li>• Ability to make a dietary prescription</li> </ul>					
<p><b>DOMAIN: 4. ADULT NUTRITION &amp; OTHERS 7.5%</b></p>						
<p>NUTRITIONAL DISORDERS</p>	<p>Obesity</p> <p>Knowledge</p> <ul style="list-style-type: none"> <li>• Describe the basic concept of human nutrition including nutritional requirements in specific condition e.g. pregnancy</li> <li>• Clinical and laboratory assessment of obesity</li> <li>• Discuss the differential diagnosis of obesity</li> <li>• List complications of obesity</li> <li>• Discuss the principles of management of simple obesity</li> </ul>				<p>CBD MCEX DOPS Mcqs Essays Assignm Log book OSCE</p>	<p>2</p>

	<p>Skills</p> <ul style="list-style-type: none"> <li>• Ability to take anthropometric measurement</li> <li>• Use the measurements to classify obesity</li> <li>• Ability to take a diet history</li> <li>• Ability to offer nutritional advice in different medical condition</li> </ul> <p>Attitude</p> <ul style="list-style-type: none"> <li>• Ability to recognize the challenges of treatment</li> <li>• Recognize the multidisciplinary approach to management and need to avoid being judgmental</li> </ul> <p>Eating disorders - Anorexia Nervosa and Bulimia</p> <p>Knowledge</p> <ul style="list-style-type: none"> <li>• Identify the clinical feature and distinguish between them</li> <li>• Identify differential diagnosis and management them</li> </ul> <p>Skills</p> <p>Ability to make a diagnosis and outline the principle of treatment</p> <p>Medical Nutritional Therapy(MNT)</p> <p>Describe MNT and counsel(s) and prescribe diet(s)</p> <p>Vitamin and iodine def.</p>					
<b>DOMAIN:5 ENDOCRINE &amp;METABOLIC EMERGENCIES AND MISCELLANOUS DISORDERS 15%</b>						
EMERGENCIES	<p>Thyroid crisis</p> <p>Myxedema coma</p> <p>Adrenal crisis</p> <p>Hyper and Hypocalcaemia crisis</p> <p>Hyperglycaemic emergencies –DKA, HHS</p> <p>Hypoglycaemic emergencies</p> <p>Knowledge</p> <ul style="list-style-type: none"> <li>• Discuss the pathophysiology of</li> </ul>				<p>CBD</p> <p>MCEX</p> <p>DOPS</p> <p>Mcqs</p> <p>Essays</p> <p>Assignm</p> <p>Log book</p> <p>OSCE</p>	2

<p>MISCELLANEOUS</p>	<p>each condition</p> <ul style="list-style-type: none"> <li>• Describe the clinical features and presentation of each</li> <li>• List common causes of these conditions including the differential diagnosis</li> <li>• Describe the point of care of each</li> <li>• Describe the approach to diagnosis and management</li> </ul> <p>Skills</p> <ul style="list-style-type: none"> <li>• Ability to perform the relevant bedside and point of care investigation</li> <li>• Ability to request for relevant investigation</li> <li>• Ability to interpret the results</li> <li>• Ability to initiate treatment and monitor response to treatment</li> </ul> <p>Attitude</p> <ul style="list-style-type: none"> <li>• To recognize emergency nature</li> <li>• Ability to communicate to relatives</li> <li>• To consult and refer</li> </ul> <p>Steroid and other hormonal abuse</p> <p>List commonly abused hormone such as steroid, GH, thyroxine</p> <p>List the complications of hormone abuse</p> <p>Describe the approach of management of abuse and complications</p> <p>MENS</p> <p>Paraneoplastic syndrome</p> <p>Thyroid cancer, APUDOMAS, Adrenal cancers, Pituitary cancers</p> <p>Knowledge</p> <ul style="list-style-type: none"> <li>• Describe their clinic features</li> </ul>					<p>1</p>
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	<ul style="list-style-type: none"> <li>• Ability to offer differential diagnosis</li> </ul> <p>Skills</p> <ul style="list-style-type: none"> <li>• Ability to offer screening test and interpret(s)</li> <li>• Ability to initiate management including referral</li> <li>• Ability to counsel patients and relatives</li> </ul> <p>Attitude</p> <ul style="list-style-type: none"> <li>• To recognize the implication of diagnosis and impact on family</li> <li>• Recognize the importance of effective communication</li> <li>• Recognize the multi-disciplinary and the psychosocial nature</li> </ul>					
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## 2.4.5 Gastroenterology & Hepatology

Title/ Theme or Domain	Specific topics, knowledge, attitude, skills	Mode of Delivery	% course coverage	Learning objectives (using taxonomy)	TCU	Method of Assessments
Introduction to Gastroenterology & Hepatology	Basic concepts, anatomy, physiology and pathology of the liver. gastrointestinal tract (GIT). Hepatic function and structure, hepatic blood supply, portal vein and portal hypertension. Gastrointestinal system from oesophagus to small and large bowel and adnexal structures.	1-3, 5	10	Level I,II	2	MCQ, Essays
Basic Clinical GIT and hepatology	Symptoms and signs in liver and GIT diseases including jaundice and ascites. Relevant clinical examination, investigations leading to diagnosis.	1-5	15	Level I,II, III	3	MCQ, essay, Clinical or Case presentation , DOPS
Laboratory Investigations in gastrointestinal tract and liver	Interpretation & Evaluation of abnormal liver function tests and other gastrointestinal function tests. Compare and contrast different profiles of liver tests in appropriate clinical situations like hemolytic, hepatocellular and cholestatic jaundice.	1-5	10	Level I, II, III	2	Case presentation , log book, MCQ
Liver diseases	Etiology and pathophysiology of acute and chronic liver disease and their complications: This includes knowledge of viral hepatitis, autoimmune hepatitis, fatty liver disease and drug-induced liver injury. Hepatic infections and focal benign and malignant liver conditions. Clinical management guidelines for common liver conditions.	1-5	15	Level I, II, III	3	Essay, MCQ, case Presentation
Disorders of esophagus, stomach and duodenum	Symptomatic syndromes such as dyspepsia, dysphagia, acute and chronic abdominal pain. Acid-peptic diseases including (but not limited to) GERD, Peptic ulcer diseases, functional diseases and	1-5	15	Level I, II, III	3	Essay, MCQ, Case presentation

	complications.					
Disorders of Small bowel and colon.	Symptomatic syndromes such as acute and chronic diarrhea. Diseases such as malabsorption syndrome, Inflammatory bowel disease, Irritable bowel syndrome, Diverticular Disease.	1-5	10	Level I,II	2	Essay, MCQ, Case presentation
Disorders of the Pancreases & biliary tree	Acute and Chronic Pancreatitis Biliary disease including gall stone disease and obstructive jaundice.	1-5	5	Level I, II	1	Essay, MCQ, Case presentation
Tropical and Miscellaneous diseases	Parasitic and other infections of the bowel and liver. This includes Amoebic liver disease, hyper immune malarial splenomegaly, abdominal tuberculosis and Peritoneal diseases Nutrition	1-5	5	Level I, II	1	Essay, MCQ, Case presentation
Radiological and Endoscopic clinical competency	Knowledge and observation of upper and lower GI endoscopy including indications, contraindications and complications. Proctoscopy and rectal snip. Percutaneous liver biopsy, Interpretation of Ultrasound scan Knowledge of advanced endoscopic procedures like ERCP and endoscopic Ultrasound scan	1-5	5	Level I, II	1	Essay, MCQ, case presentation
Clinical emergencies in Gastroenterology & Hepatology	Upper and lower gastrointestinal bleeding, Hepatic encephalopathy, acute (medical) abdomen, severe inflammatory bowel disease, severe ascites	1-5	5	Level I, II, III	1	
Specific clinical competencies in Hepatology & Gastroenterology	Abdominal paracentesis (P) Fine needle aspiration biopsy. Liver biopsy (O) Upper abdominal Ultrasound (O) Peritoneal biopsy (O)	1-5	5	Level I, II	1	Essay, Log book,



## 2.4.6 NEPHROLOGY

Course title	Specific topics, knowledge, attitude and skills	Mode of delivery	% of course coverage	Learning objectives (Levels using taxonomy)	Total credit units	Assessment methods
BASIC CONCEPTS	To describe and comprehend the anatomy and physiology of the kidney.	1,5	5%	I,II	0.5	MCQs, ESSAYS
	To elicit symptoms and signs and make appropriate diagnosis of kidney diseases.	1,4,5	5%	I,II,III	0.5	MCQS ,ESSAYS
	Discuss investigations and comprehend diagnosis of renal disease. (Including procedures; renal biopsy,IVU etc), Demonstrate ability to interpret data in Nephrology.	1,4,5	5%	I,II,III	1	MCQS, ESSAYS, CLINICALS /PRACTICALS
Fluids, electrolyte and acid base disorders	Describe water metabolism, Explain, interpret and recognize the importance of disorders of sodium, potassium, magnesium and calcium, including acidosis and alkalosis.	1,2,4,5,6	5%	I,II	0.5	MCQS , ESSAYS , CLIN/PRACT
Acute kidney injury	-Outline the definition,- - describe the epidemiology, - list the causes, -explain the pathophysiology, -identify the clinical features, investigations, and outline the management.	1,2,3,4,5,7	8%	I,II,III	1	MCQS , ESSAYS ,CLIN/PRACT
Chronic kidney disease	Describe the epidemiology, explain the pathophysiology, clinical features, list investigations, and participate in the management.	1,2,3,4,5,7	10%	I,II,III	2	MCQS, ESSAYS, CLIN/PRACT
Glomerulonephritis	Categorize and identify acute, primary and secondary, describe the	1,3,4,6,7	5%	I,II	1	MCQS , ESSAYS, CLIN/PRACT

	clinical features and outline management.					
Nephrotic syndrome	Definition, list the causes, comprehend the classification, explain the pathogenesis, clinical features, outline investigations, and management	1,3,4,6,7	5%	I,II	1	MCQS , ESSAYS , CLIN/PRACT
Urinary tract Infection	Explain the epidemiology, pathophysiology, clinical features, identify and keep abreast of investigations, and management	1,2,3,4,5	3%	I,II,III	1	MCQS , ESSAYS , CLIN/PRACT
Interstitial renal disease	Explain and identify acute, chronic interstitial nephritis, including analgesic nephropathies	1,2,3,4,5,7	2%	I,II,III	0.5	MCQS, ESSAYS, CLIN/PRACT
Hypertension and the kidney	Describe the epidemiology, pathophysiology, clinical features, outline investigations, and keep abreast of management.	1,3,4,5,7	5%	I,II,III	1	MCQS, ESSAYS, CLIN/PRACT
Dialysis	Explain and comprehend renal replacement therapies (Haemodialysis, peritoneal dialysis, ultra filtration, Continuous renal replacement therapy), describe access types and assess complications	1,2,3,4,5,6,7	5%	I,II	2	MCQS + ESSAYS + CLIN/PRACT
Kidney transplantation	List the Indications and contraindications, explain donor preparations and selections, identify immediate and long term complications(including rejections) and outline treatment . Explain and understand the indications and mechanisms of action and side effects of immunosuppressive agents.	1,4,5,7	5%	I,II	1	MCQS + ESSAYS + CLIN/PRACT
Drugs and the kidney	Discuss the excretion and metabolism of drugs in the healthy and diseased kidneys	1,2,5,6	2%	I,II	0.5	MCQS, ESSAYS

Pregnancy and the kidneys	Explain the physiology response of the kidneys to pregnancy. Identify and comprehend Obstructive kidney disease in pregnancy. Outline hypertension in pregnancy (including Toxaemia of pregnancy, ),list investigations and discuss management of proteinuria in pregnancy	1,4,5,7	2%	I	1	MCQS, ESSAYS, CLIN/PRACT
Kidney in connective tissue diseases	Describe Lupus nephritis and the vasculitides	1,3,4,5,7	2%	I,II	0.5	MCQS, ESSAYS, CLIN/PRACT
Cystic diseases of the kidneys	Categorize Congenital and acquired cystic diseases. Describe Autosomal Dominant Polycystic Kidney Disease	1,2,5,7	2%	I,II	1	MCQS, ESSAYS, CLIN/PRACT
Diabetes and the kidneys.	Diabetic Nephropathy; Definition, epidemiology, describe the pathogenesis, identify the clinical features, list the investigations, and keep abreast of management.	1,3,4,5,7	5%	I,II	1	MCQS, ESSAYS ,CLIN/PRACT
Obstructive nephropathy	Categorize and discuss and participate in management of congenital and acquired obstruction.	1,3,4,5,7	3%	I,II	1	MCQS, ESSAYS ,CLIN/PRACT
Congenital disease of the kidney	Describe the types , list and comprehend the complications, discuss investigations and management options.	1,2,3,4,5	2%	I,II	0.5	MCQS, ESSAYS, CLIN/PRACT
Renal tubular disorder	Identify and discuss renal tubular acidosis, proximal tubular disorders and Diabetes insipidus.	1,2,3,4,5,6	2%	I	0.5	MCQS, ESSAYS
Renal tumors	Describe, identify and assess Wilms tumor and renal cell carcinoma	1,2,3,4,5,6	2%	I,II	0.5	MCQS, ESSAYS, CLIN/PRACT
Tropical nephropathies	Describe and recognize importance value of malaria nephropathies, filarial, schistosomal .	1,2,3,4,5,6,7	5%	I	0.5	MCQS, ESSAYS, CLIN/PRACT
HIV and the kidneys	Describe the epidemiology, list types of involvement,	1,2,3,4,5,6,7	5%	I,II	0.5	MCQS , ESSAYS,

	explain the pathogenesis, outline the clinical features and keep abreast of management					CLIN/PRACT
<b>TOTAL UNITS</b>					<b>20</b>	

2.4.7 Neurology

Title	Specific topics (Knowledge, Attitudes and Skills)	(%) of course coverage	Learning Objectives	Total Credit Units	Mode of delivery	Mode of assessment
Basic concepts	<b>Functional localization:</b> define and identify the likely site of a lesion within the nervous system based on relevant clinical history and examination (K)	10	Level 3	2	1-6	MiniCEX, MCQ, OSCE
	<b>Approach to patient with neurologic disease:</b> - demonstrate proficiency in obtaining a complete and concise, reliable and chronological neurologic history (S); - demonstrate ability to synthesize the history and physical examination if formulating a preliminary differential diagnosis (functional anatomical/aetiological (S) - exhibit a professional empathetic disposure in interacting with neurologic patients and caregivers (A) - recognize when specialist neurologist opinion is required (A)		Level 3		1-4	MiniCEX, OSCE
	<b>The Neurologic Examination:</b> understand the anatomy and pathways of underpinning the neurologic examination (K); demonstrate proficiency in performing a reliable neurologic examination eliciting verifiable neurologic signs (full, screening/abridged, and focused neurologic examination) (S); exhibits empathy and good bedside manner in performing neurologic exam (A)		Level 3		4,5	MiniCEX, OSCE
Disorders of consciousness	<b>Neuroanatomical basis of consciousness:</b> understands the basis for control of	5	Level 3	1	1,2,3,5	MCQ, Essay

	consciousness and mechanisms leading to coma (K)					
	<b>Coma and other disorders of consciousness; Acute confusional state; Brain death:</b> understands the definition, differential diagnosis, causes and clinical presentation (K); demonstrates an understanding of the initial evaluation (including use of the GCS scale) and management of altered sensorium (K,S); demonstrates empathy in communicating poor prognosis (A)		Level 2		1,2.3.4.5	MiniCEX, MCQ, Essay, OSCE
<b>CNS infections</b>	<b>Meningitis (Acute/Subacute/Chronic); Brain Abscess; Encephalitis:</b> recognise the clinical presentation of CNS infections (K,S); demonstrate an understanding of the investigations (and findings), diagnostic criteria, and initial treatment of CNS infections particularly ABM and TBM (K); demonstrate ability to perform a lumbar puncture and recognize the indications and contraindications (S)	5	Level 3	1	1-6	Log book, MiniCEX, SAQ, MCQ, OSCE
<b>Cerebrovascular disease</b>	<b>Stroke:</b> recognize the clinical presentation, risk factors, and subtypes of stroke (K, S); demonstrate an understanding of the localization of strokes (based on vascular territory) (K); outline the relevant investigations in acute stroke (including appropriate prioritization); recognize the neuroimaging features in stroke subtypes (S); understand the basis for initial interventions and secondary prevention of stroke (K)	10	Level 2	2	1 – 7	Log book, MiniCEX, SAQ, MCQ, OSCE
<b>Epilepsy and other paroxysmal neurologic disorders</b>	<b>Epilepsy; Status epilepticus; Differential diagnosis of paroxysmal events (syncope, etc):</b> demonstrates knowledge of the definition and	10	Level 3	2	1-6	MiniCEX, MCQ, SAQ, Essay, OSCE

	classification of epileptic seizures (K); understands the causes and initial evaluation and initial treatment of status epilepticus (K,S); demonstrates an understanding of the distinguishing features of seizures and syncope and other paroxysmal events/ seizure mimics (K).					
<b>Headache and Pain</b>	<b>Definition and broad classification of headaches; Common primary headaches; Approach to pain management:</b> demonstrates knowledge of the classification of HA and diagnostic criteria for migraine, tension HA, cluster headache (K); understands the distinguishing features of primary headaches and red flags for dangerous headaches (K); demonstrates understanding of the principles of analgesic use (K, A); understands the distinguishing features of neuropathic and somatic pain (K)	5	Level 2	1	1-6	MiniCEX, MCQ, SAQ, Essay, OSCE
<b>Spine and spinal cord disorders</b>	<b>Spinal cord syndromes; Common causes of myelopathies:</b> Recognizes the clinical manifestations of the spinal cord syndromes (including cauda equine and conus medullaris lesions) (K); Recognizes the common causes of myelopathies (including acute causes (K); Recognizes the appropriate imaging modalities of myelopathies (K);	5	Level 2	1	1 - 6	MiniCEX, MCQ, Essay, SAQ, OSCE
<b>Peripheral neuropathies</b>	<b>Common cranial neuropathies; Acute demyelinating neuropathy; Common causes of peripheral neuropathy:</b> recognize the common cranial neuropathies (CN VII and III) and their causes (K,S); demonstrate an understanding	5	Level 3	1	1 - 6	MiniCEX, MCQ, OSCE

	of the clinical presentation of GBS and CIDP; recognize the presentation of diabetic neuropathies (K)					
<b>Myopathies and neuromuscular junction disorders</b>	<b>Approach to evaluation of muscle weakness; Myasthenic syndromes:</b> recognize the clinical localization and common causes of muscle weakness (K, S); describe the aetiopathogenesis and features of myasthenic syndromes and distinguish myasthenia gravis from Eaton Lambert syndrome; recognize and differentiate myasthenic and cholinergic crises (K,S); describe the procedure for a Tensilon test (K, S)	5	Level 3	1	1 - 6	MCQ, OSCE, CbD, MiniCEX
<b>Gait, Coordination and Movement disorders</b>	<b>Classification and Overview of Movement Disorders; Parkinsonism and Parkinson disease; Cerebellar disorders:</b> demonstrate an understanding of the broad types of movement disorders (K); demonstrate the ability to examine a patient with tremors (S); understand the distinguishing features of the tremor syndromes (K); distinguish PD from other common neurodegenerative parkinsonisms (K); be aware of the causes of cerebellar ataxia (K)	5	Level 2	1	1 - 6	MCQ, MiniCEX, OSCE,
<b>Sleep and sleep disorders</b>	<b>Basic concepts of sleep physiology; Broad classification of sleep disorders; Evaluation of a patient with sleep disorder:</b> understand the control of sleep (K); demonstrate knowledge of the broad classes of sleep disorders (K); recognize the features of common sleep disorders (insomnia, narcolepsy, OSA) (K); describe and conduct a clinical	5	Level 2	1	1 -3, 4, 5, 6	MCQ, Essay, SAQ, MiniCEX



	sleep evaluation (K,S)					
<b>Dementia and disorders of higher cortical function</b>	<b>Differential diagnosis of dementia; Aphasia:</b> recognize and describe the domains of cognitive function, common causes and classification of dementia (K); describe the evaluation of cognitive function using common instrument (MMSE) (S); describe the anatomical basis of language function, subtypes of aphasia, and common causes (K)	5	Level 2	1	1-6	MiniCEX, MCQ, OSCE, SAQ, Essay
<b>Neurotoxicologic and Nutrition – related disorders</b>	<b>Tetanus; Botulism; Wernicke-Korsakoff syndrome; Vitamin B12 related disorders:</b> demonstrate an understanding of the pathogenesis, clinical features, investigation, differential diagnosis and initial treatment of these disorders (K);	5	Level 3	1	1-6	MCQ, OSCE, SAQ, Essay
<b>Miscellaneous disorders</b>						
<b>a) Disorders of CSF circulation</b>	<b>Normal pressure hydrocephalus; Pseudotumor cerebri (idiopathic intracranial hypertension):</b> recognize the clinical and radiologic features of NPH and IIH (K)	10	Level 3	2	4-6	OSCE, MCQ, SAQ
<b>b) Raised intracranial pressure</b>	Be aware of the common causes, mechanisms and clinical features of raised ICP including herniation syndromes (K); demonstrate knowledge of the methods of treating raised ICP		Level 3		1-6	MCQ, OSCE, SAQ
<b>c) Motor neuron disease</b>	<b>Amyotrophic lateral sclerosis:</b> recognize the clinical features and distinguishing characteristics of ALS (K)		Level 1		2-4,6	MCQ, OSCE, SAQ
<b>d) Nervous system and cancer</b>	<b>Primary and secondary CNS tumors; Paraneoplastic neurologic syndromes:</b> demonstrate knowledge of the types of brain tumors and common origins and clinical features of brain tumors and metastases (K)		Level 1		1,6	MCQ, OSCE, SAQ
<b>e) Autoimmune and</b>	<b>Neuromyelitis optica; Multiple</b>		Level 1		2,3,5	MCQ, OSCE,

<b>demyelinating disorders</b>	<b>sclerosis; Postinfectious encephalomyelitis:</b> demonstrate knowledge of the mechanism, clinical features, investigation of these disorders (K)					SAQ
<b>f) Neurodevelopmental disorders</b>	<b>Neurocutaneous syndromes; Chiari malformation:</b> be aware of the spectrum of and distinguishing features of the neurocutaneous syndromes (K); recognize the types and features of Chiari malformations (K)		Level 1		1,6	MCQ, OSCE, MiniCEX
<b>Common neurologic emergencies</b>	<b>Acute stroke, status epilepticus, acute meningitis, head injury, severe headaches, acute confusional state, acute paralysis:</b> Recognize the clinical presentation, investigation, and initial treatment of common neurologic disorders (K)	10	Level 3	2	1-6	MiniCEX, MCQ, OSCE, SAQ, Essay

## 2.4.8 Respiratory Medicine

Theme	Specific topic, Knowledge, Attitude, Skills	% Course Coverage	Learning Objectives (Using taxonomy)	Mode of delivery	Total Credit unit	Method of Assessment
Basic Concepts	Describe the embryology, anatomy and physiology of the respiratory system	3	Level 1	1, 2, 3	1	MCQ, SAQ
	List the respiratory defenses		Level 1	1, 2, 3		MCQ, SAQ
	Comprehend the concept of ventilation/perfusion of the lungs		Level 2	1, 2, 3, 6		MCQ, SAQ, log book, essay
Investigations in pulmonology	<p><b>Non invasive</b></p> <ul style="list-style-type: none"> <li>Order and interpret sputum microscopy and culture for bacteria, tuberculosis and fungal elements.</li> <li>Discuss the indications for peak flow and spirometry and be able to perform and interpret the results of these measurements.</li> <li>Demonstrate the ability to order and perform sputum induction.</li> <li>Comprehend the indications for lung volume measurement and diffusing capacity for carbon monoxide and how they are affected by disease.</li> </ul> <p><b>Invasive</b></p> <ul style="list-style-type: none"> <li>Undertake fine needle aspiration biopsy of peripheral lymph nodes.</li> <li>Identify the indications for bronchoscopy and thoracic ultrasound and the potential complications</li> </ul>	10	Level 3	2, 3, 4, 5	2	MCQ, SAQ, OSCE, Essay, Log book.
		Level 3				
		Level 3				
		Level 2				
		Level 3				
		Level 2				
Obstructive airway diseases (Asthma and Chronic obstructive pulmonary disease (COPD))	Employ guidelines in the diagnosis, classification of severity and treatment of asthma and COPD. Recognize the circumstances for referral and be able to undertake the management of acute exacerbations based on guidelines.	10	Level 3	2, 3, 4, 5, 6, 7	2	MCQ, SAQ, OSCE, Essay, Log book.
Cor-pulmonale	Assess and recognize the risk factors for cor-pulmonale, employ appropriate diagnostic modalities and commence treatment.	3	Level 3	2, 3, 4, 5, 6, 7	0.5	MCQ, SAQ, OSCE, Essay, Log book
Acute respiratory distress syndrome and respiratory	Elicit symptoms and signs of acute respiratory distress syndrome and respiratory failure. Order and interpret results of arterial blood gas, commence management and recognize the circumstances for referral for assisted	3	Level 3	2, 3, 4, 5, 6, 7	0.5	MCQ, SAQ, OSCE, Essay, Log book

failure	ventilation.					
Oxygen therapy and Mechanical ventilation	Identify the indications for oxygen therapy, ensure safe prescribing and recognize potential toxicity. Comprehend the indications for non-invasive and invasive ventilation and the principles of use.	5	Level 3	2, 3, 4, 5, 6, 7	1	MCQ, SAQ, OSCE, Essay, Log book
Pneumonia	Discuss the pathogenesis, pathophysiology, diagnosis, severity classification of pneumonia and employ guidelines in the management of pneumonia.	10	Level 3	1, 2, 3, 4, 5, 6, 7	2	MCQ, SAQ, OSCE, Essay, Log book
Deep vein thrombosis and pulmonary embolism	Assess for the risk factors for DVT and PE. Order appropriate investigations for diagnosis and commence prophylactic and therapeutic treatment as appropriate including the use of anticoagulants and thrombolytic agents. Counsel on DVT and PE prevention.	5	Level 3	1, 2, 3, 4, 5, 6, 7	1	MCQ, SAQ, Essay
Pleural effusion and Pneumothorax	Perform pleural aspiration institute emergency treatment and seek appropriate treatment. Recognize the indications for pleural biopsy and comprehend the procedure.	5	Level 3	3, 4, 5	1	MCQ, SAQ, Essay, log book
Hemoptysis	Assess for the risk factors and severity of hemoptysis. Should be able to institute emergency management and seek additional expertise.	5	Level 3	2, 3, 4, 5	1	MCQ, SAQ, Essay, log book
Pulmonary tuberculosis	Undertake the diagnosis and be able to prescribe standard treatment. Comprehend the definition, risk factors, diagnostic modalities for multidrug resistance and extremely drug resistant TB and ensure appropriate referral for further care.	10	Level 3	1, 2, 3, 4, 5, 6, 7	2	MCQ, SAQ, OSCE, Essay, log book
HIV and the lungs	Describe the infectious and non-infectious manifestations of HIV in the lungs and the drug Interactions in HIV and TB treatment.	3	Level 2	1, 2, 3, 4, 5, 6, 7	0.5	MCQ, SAQ, OSCE, Essay, log book
Suppurative lung diseases	Describe the classification, diagnosis and approach to management.	5	Level 2	1, 2, 3, 4, 5, 6	1	MCQ, SAQ, OSCE, Essay
Interstitial lung disease/ Occupational lung diseases	Describe the risk factors and order basic investigations to diagnose these conditions. They should have a basic understanding of the approach to management	3	Level 2	3, 5	0.5	MCQ, SAQ, OSCE, Essay
Obstructive sleep apnea and other sleep disordered breathing.	Discuss the risk factors and approach to diagnosis and treatment.	5	Level 3	1, 2, 4	1	MCQ, SAQ, OSCE, Essay
Introduction to pulmonary neoplasias	Describe the risk factors for lung cancer and recognize the general approach to diagnosis and treatment.	3	Level 3	1, 2, 4, 5	0.5	MCQ, SAQ, OSCE
Tobacco use,	Discuss the prevalence and risk	5	Level 3	2, 3, 6	1	MCQ, SAQ,

addiction and therapy	associated with tobacco use. Participate in the multidisciplinary approach in smoking cessation.					OSCE, Essay
Pulmonary rehabilitation	Identify the indications for pulmonary rehabilitations. Describe the procedure and the potential efficacy.	2	Level 2	2, 4	0.5	MCQ, SAQ
Lung transplantation	Outline the indications for lung transplantation.	2	Level 2	2,5	0.5	MCQ
Drugs and the lungs	Discuss the drugs that have the potential adverse drug reactions in the lungs	3	Level 3	2, 4.	0.5	MCQ, SAQ, OSCE, Essay

2.4.9. DERMATOLOGY AND GENITO-URINARY MEDICINE

DOMAIN	SPECIFIC TOPICS - KNOWLEDGE ATTITUDES AND SKILLS	% OF COURSE CONTENT	LEARNING OBJECTIVES	MODE OF DELIVERY	TOTAL CREDIT UNITS	METHOD OF ASSESSMENT
<b>DERMATOLOGY</b>						
<b>Introduction to Dermatology</b>	<p><b>KNOWLEDGE</b> Describe the anatomy, physiology and functions of the skin. Categorize the terminology used in dermatology.</p> <p><b>SKILLS</b> Demonstrate the ability to take a good dermatological history and conduct a proper examination of the skin</p>	2.5	Level 1 - 3	1,2,3,4	0.5	MCQ Theory questions Log book OSCE
<b>Diagnostic and screening procedures in dermatology</b>	<p><b>SKILLS</b> Demonstrate the ability to interpret and apply results of the following:</p> <ul style="list-style-type: none"> <li>• Skin scrapings (P)</li> <li>• Skin Biopsies(P)</li> <li>• Patch Test(O)</li> <li>• Slit skin smear (O)</li> <li>• Skin snip (O)</li> </ul>	5	Level 3	1,2,3,4	1	MCQ Theory questions Log book Practicals OSCE
<b>Eczema</b>	<p>Classify eczemas and discuss the aetiopathogenesis, clinical features, management of and recent advances in the following:</p> <ul style="list-style-type: none"> <li>• Atopic</li> <li>• Dyshidrotic</li> <li>• Asteatotic</li> <li>• Lichen simplex chronicus</li> <li>• Nummular</li> <li>• Contact (Allergic/Irritant )</li> </ul>	5	Level 1 - 3	1,2,3,4,5,6	1	MCQ Theory questions Practicals OSCE
<b>Disorders of the adnexal skin structures (pilosebaceous, apocrine, eccrine glands and the nails)</b>	<p>List adnexal skin structures. Discuss the aetiopathogenesis, clinical features and management of the following:</p> <ul style="list-style-type: none"> <li>• Acne</li> <li>• Rosacea</li> <li>• Hidradenitis suppurativa</li> <li>• Fox –Fordyce disease</li> <li>• Chromhidrosis/Bromhidrosis</li> <li>• Hyper/hypohidrosis</li> <li>• Sweat retention syndrome</li> <li>• Onychomycosis</li> </ul>	5	Level 1 - 3	1,2,3,4,5,6	1	MCQ Theory questions OSCE

<b>Alopecia</b>	Define alopecia, classify and discuss the causes, diagnosis and management of scarring and non scarring alopecia.	<b>2.5</b>	<b>Level 1 - 3</b>	1,2,3,4,5,6	0.5	MCQ Theory questions Practicals OSCE
<b>Papulosquamou s disorders</b>	Define and classify papulosquamous disorders. Discuss the aetiopathogenesis, clinical features and management of the following: <ul style="list-style-type: none"> <li>• Psoriasis</li> <li>• Lichen planus</li> <li>• Pityriasis rosea</li> <li>• Seborrheic dermatitis</li> </ul> List the associated risk factors	<b>5</b>	<b>Level 1 - 3</b>	1,2,3,4,5,6	1	MCQ Theory questions Log Book OSCE
<b>Superficial skin infections and infestations (bacterial, fungal, viral and parasitic)</b>	Define and classify superficial skin infections and infestations. Discuss the clinical features and management of the following superficial skin infections: <ul style="list-style-type: none"> <li>• Bacterial infections</li> <li>• Fungal infections</li> <li>• Viral infections</li> <li>• Parasitic infestations</li> </ul>	<b>10</b>	<b>Level 1 - 3</b>	1,2,3,4,5,6	2	MCQ Theory questions Practicals Log Book OSCE
<b>Leprosy</b>	Define and classify leprosy. Discuss the pathogenesis, diagnosis, management, prevention and complications associated with leprosy	<b>5</b>	<b>Level 1 - 3</b>	1,2,3,4,5,6,7	1	MCQ Theory questions Practicals Log Book OSCE
<b>Blistering skin disorders</b>	Define and classify blistering skin disorders. Discuss the diagnosis, management and complications associated with blistering skin disorders. <ul style="list-style-type: none"> <li>• Pemphigus</li> <li>• Pemphigoid</li> </ul>	<b>5</b>	<b>Level 1 - 3</b>	1,2,3,4	1	MCQ Theory questions Practicals OSCE
<b>Pigmentary skin disorders</b>	Define and classify Pigmentary skin disorders. Discuss the diagnosis, management, associated disorders and complications associated with Pigmentary skin disorders. <ul style="list-style-type: none"> <li>• Vitiligo</li> <li>• Albinism</li> <li>• Lentiginos</li> </ul>	<b>5</b>	<b>Level 2</b>	1,2,3,4,5	1	MCQ Theory questions Log Book OSCE
	Define HIV infection, AIDS, HAART and Opportunistic infections.					MCQ Theory

<b>HIV/AIDS</b>	Discuss the aetiopathogenesis, WHO staging, clinical features, management of and recent advances in HIV infection. Discuss the prevention of HIV infection (pre/post exposure prophylaxis)	<b>10</b>	<b>Level 1 - 3</b>	1,2,3,4,5,6,7	2	questions Practicals Log Book OSCE
<b>Cutaneous manifestations of:</b> <ul style="list-style-type: none"> <li>• <b>systemic disorders</b></li> <li>• <b>connective tissue disorders</b></li> <li>• <b>Internal malignancies</b></li> </ul>	Discuss the diagnosis, clinical features and management of the following: <b>System Disorders</b> <ul style="list-style-type: none"> <li>• Diabetes mellitus</li> <li>• Thyroid disorders</li> <li>• Chronic liver disease</li> <li>• Chronic renal failure</li> <li>• Tuberculosis</li> </ul> <b>Connective Tissue Disorders</b> <ul style="list-style-type: none"> <li>• SLE</li> <li>• Systemic sclerosis</li> <li>• Mixed connective tissue disease</li> <li>• Rheumatoid arthritis</li> <li>• Sarcoidosis</li> <li>• Dermatomyositis</li> </ul> <b>Internal malignancies</b> <ul style="list-style-type: none"> <li>• Carcinomas of the breast, liver, lungs</li> <li>• Hodgkin,s Lymphoma</li> </ul> Definition Epidemiology Pathophysiology Diagnosis – Multi disciplinary approach Management	<b>10</b>	<b>Level 1 - 3</b>	1,2,3,4,5	2	MCQ Theory questions Log Book OSCE
<b>Common skin cancers</b>	List the common skin cancers. Discuss Basal cell carcinoma, Squamous cell carcinoma and Melanomas using the following sub heads: <ul style="list-style-type: none"> <li>• Aetiopathogenesis</li> <li>• Epidemiology</li> <li>• Clinical features</li> <li>• Diagnosis and staging</li> <li>• Management – multi disciplinary approach</li> <li>• Chemotherapy</li> <li>• Prognosis</li> <li>• Palliative care</li> </ul>	<b>5</b>	<b>Level 1 - 3</b>	1,2,3,4,5,6,7	1	MCQ Theory questions Practicals Log Book OSCE
<b>Dermatological preparations and drugs used in dermatology</b>	Discuss the indications, contraindications and side effects associated with the use of antifungals, corticosteroids, immunosuppressants, sunscreens and biologics in dermatology.	<b>5</b>	<b>Level 1 - 2</b>	1,2,3,4,5,6	1	MCQ Theory questions Practicals OSCE



<b>Adverse cutaneous drug reactions</b>	<ul style="list-style-type: none"> <li>Define drug reactions.</li> <li>List the common drug reactions encountered in dermatology</li> <li>Discuss the management of: Fixed drug eruptions Erythema multiforme – major/minor Steven Johnsons syndrome Scalded skin syndrome Toxic epidermal necrolysis Hypersensitivity vasculitis Erythroderma Lichenoid drug eruptions</li> </ul>	<b>5</b>	<b>Level 1 - 3</b>	1,2,3,4,5,6	1	MCQ Theory questions Practicals Log Book OSCE
<b>GENITOURINARY MEDICINE</b>						
<b>The genitourinary system</b>	Describe the anatomy and physiology of the GUS	<b>2.5</b>	<b>Level 1</b>	1,2,3,4	0.5	MCQ Theory questions
<b>Common sexually transmitted diseases</b>	Define <b>sexually transmitted diseases</b> Discuss the syndromic management of STDs Describe the 4Cs of STD management Discuss recent advances in management and safe sexual practices	<b>10</b>	<b>Level 1 - 3</b>	1,2,3,4,5,6,7	2	MCQ Theory questions Practicals Log Book OSCE
<b>Sexual dysfunction</b>	Define sexual dysfunction. Discuss the Pathophysiology, Symptoms and signs, risk factors, diagnosis and management of sexual dysfunction.	<b>2.5</b>	<b>Level 1 - 2</b>	1,2,3,4,5	0.5	MCQ Theory questions

#### 2.4.10 Clinical Pharmacology & Therapeutics

Domain	Specific topics, knowledge, attitudes skills	% of course coverage	Learning objectives (using taxonomy)	Mode of delivery	Total credit units	Method of assessment
Introductory Clinical Pharmacology & Therapeutics	History of Basic and Clinical Pharmacology Drug discovery, development (incl. introduction to clinical trials and Regulation). Principles of Pharmacokinetics and Pharmacodynamics Biotransformation of Medicines Therapeutic Drug monitoring (TDM) (K)	15	Level 1	1, 2	1	1
Organ-System Pharmacology	Drugs acting on the Organ – System:( (K, S) <ul style="list-style-type: none"> <li>• Cardiovascular</li> <li>• Renal</li> <li>• Central Nervous System</li> <li>• Endocrine</li> <li>• Gastrointestinal</li> <li>• Hematopoietic (haematinics, antiplatelets growth factors, anti coagulation etc)</li> <li>• Musculo-skeletal (Anti-inflammatory drugs – non-steroidal, disease –modifying anti-rheumatic drugs, uricosurics and other drugs for treatment of gout, Analgesics)</li> <li>• Dermatologicals</li> <li>• Immunopharmacotherapy (Biologicals; Immunomodulators )</li> </ul>	25	Level 1, II	1, 2	2	1
Chemotherapy I (Antimicrobials)	<ul style="list-style-type: none"> <li>• Principle of selective toxicity; mechanism of action and</li> <li>• Drug resistance (K)</li> <li>• Antibacterial agents (K, S)</li> <li>• Anti-mycobacterial drugs</li> <li>• Antiviral</li> <li>• Antiprotozoal drugs</li> <li>• Antifungal drugs</li> <li>• Anthelmintic dugs</li> </ul>	25	Level 1, II	1, 2	2	1

	<ul style="list-style-type: none"> <li>• Cytotoxic therapy (antineoplastic drugs) (K, S)</li> </ul>					
Drug utilization	Principles of therapeutics Essential Medicines List and Programmes Rational Use of Medicines Rational Prescribing Prescription Writing; sources of poisons and drug information (K, S)	15	Level I,II, III	1, 2, 4	1	1, 3
Toxicology Pharmacovigilance	Definitions, classification, common poisons general principles of management; antidotes; management specific poisons (e.g. paracetamol; organophosphates, methanol etc) (K, S) Adverse DRs (definition, epidemiology, diagnosis, reporting and management), medication errors, spurious, substandard, falsely labeled, counterfeit (SSFC) medicines; drug interactions; drug-induced emergencies e.g anaphylactic reactions, angioedema malignant hyperthermia; emergency trolley etc (K, S)	20	Levels I,II,III	1, 2, 3	1	1, 3

### 2.4.11 Geriatrics

Domain	Specify topics, knowledge, attitudes & skills	% of course coverage	Learning objectives (using taxonomy)	Total Credit Units	Mode of delivery	Assessment Method
Introduction to Geriatric Medicine	<p><b>Clinical evaluation of the geriatric patient; Comprehensive Geriatric Assessments (CGA); Introduction to end of life decision making; Introduction to palliative care.</b></p> <ul style="list-style-type: none"> <li>• Explain the concepts of multi-, inter- &amp; trans-disciplinary team care; participate in team care (K)</li> <li>• Recognize the importance of atypical presentation of diseases in older adults (A/B)</li> <li>• Recognize that older adults often present with multi-morbidities (A/B, K).</li> <li>• Explain the domains in CGA (K)</li> <li>• Recognize the roles of other disciplines in CGAs (A/B).</li> <li>• Recognize the need for, and act appropriately when other specialist opinion(s) is/are required in the care of the elderly (A/B).</li> <li>• Perform medication reviews and medication reconciliations (S).</li> <li>• Explain and discuss the multi-faceted underpinning causes of disease in older adults e.g. social, psychological and cultural factors (K, S).</li> <li>• Recognize the limitations associated with hospital care for the elderly (A/B)</li> <li>• Demonstrate sensitivity in preventing hospitalization associated complications (A/B).</li> <li>• Discuss debates concerning advance care directives; recognize the need for advance care planning (S).</li> <li>• Recognize the importance of cultural nuances in discussions of whether to or not to resuscitate (A/B)</li> <li>• Demonstrate sensitivity in communicating with patients, care givers and colleagues (A/B, S)</li> </ul>	14%	Levels 1-3	1	1-7	Mini-CEX, OSCE
Ageing	<p><b>Anatomical changes associated with ageing; Biochemical changes associated with ageing; Physiological changes associated with ageing</b></p> <ul style="list-style-type: none"> <li>• &amp; physiological changes associated with ageing (K)</li> <li>• Distinguish between normal ageing and disease (K, S)</li> </ul>	14%	Level 1-2	1	5, 6	Mini-CEX, MCQs, SAQs

<p>Geriatric Syndromes &amp; Common Tools for Geriatric Assessment</p>	<p><b>Mild cognitive impairment, Delirium, Depression &amp; Dementia; Deconditioning; Elder mistreatment; Falls; Frailty &amp; Sarcopenia; Incontinence; Malnutrition; Pressure ulcers; Sleep disorders</b></p> <p><b>Barthel Index; Mini-Cog; Confusion Assessment Method; Mini Nutritional Assessment tool; Braden Scale</b></p> <ul style="list-style-type: none"> <li>• Describe the spectrum of geriatric syndromes (K).</li> <li>• Explain strategies to prevent and manage geriatric syndromes (K)</li> <li>• Describe strategies to prevent &amp;/or limit hospitalization-associated deconditioning (K)</li> <li>• Demonstrate commitment to preventing hospitalization-associated deconditioning (A/B)</li> <li>• Demonstrate understanding of the indications, uses, relevance &amp; limitations of tools for geriatric assessments (K, A/B)</li> <li>• Perform geriatric assessments, using the appropriate tools (S)</li> </ul>	<p>57%</p>	<p>Level 1-3</p>	<p><b>4</b></p>	<p>2-7</p>	<p>Mini-CEX, MCQs, SAQs, essay, DOPS, OSCE</p>
<p>Geriatric Therapeutics</p>	<p><b>Appropriate use of medicines in the elderly; Prescribing; Drug interactions, Adverse drug reactions; Pharmacovigilance.</b></p> <ul style="list-style-type: none"> <li>• Explain pharmacokinetic and pharmacodynamic changes associated with ageing and how these impact on medication use in older adults (K)</li> <li>• Demonstrate appropriate prescribing and prescription writing skills (S)</li> <li>• Discuss drug-drug, drug-disease and drug-food interactions (S)</li> <li>• Discuss appropriate strategies to prevent drug interactions in older adults (S)</li> <li>• Discuss polypharmacy and peculiarities of polypharmacy in older adults (S)</li> <li>• Explain the principles of pharmacovigilance (K)</li> <li>• Recognize the need to appropriately identify and report adverse drug reactions (A/B)</li> <li>• Manage adverse drug reactions in older adults in collaboration with other relevant disciplines (A/B, S)</li> </ul>	<p>14%</p>	<p>Level 1-3</p>	<p><b>1</b></p>	<p>2, 3, 5</p>	<p>Mini-CEX, MCQs, SAQs, essay, OSCE</p>

#### 2.4.12 Emergency Medicine and Critical Care

Title	Specific Topics, Knowledge, Attitudes	% of Course Coverage.	Learning Objectives	Total Credit Units	Mode of Delivery	Methods of Assessment
<b>Basic Organisation of Emergency Services</b>	Understand common organizational structures of emergency medical services (EMS). [K] Learn the educational requirements and skill levels of various EMS providers. [K] Learn principles of EMS system operations. [K] Describe local, state and national components of EMS. [K] Demonstrate ability to use all elements of the EMS communication system. [K]	5%	I – III	1	1 – 6.	MCQ
<b>Emergency Admission and Triage</b>	Learn principals of pre-hospital triage and emergency medical care delivery. [K] Discuss EMS pre-hospital care protocols. [K,S] Learn principals of in-hospital triage and emergency medical care delivery. [K] Learn basic principles of disaster management. [K] Learn basic concepts of mass casualties. [K] Learn basic concepts of disaster management.[K]	10%	I – III	2	1 – 7.	MCQ Essays
<b>Acute Medical Presentations</b>	Learn the pathophysiology, presentation, and management of acute conditions in the following specialties of Internal Medicine:[K] i. Cardiology ii. Dermatology iii. Endocrinology iv. Gastroenterology v. Haematology vi. Infectious Diseases vii. Neurology viii. Nephrology ix. Pulmonology x. Rheumatology Assimilate general concepts of history taking and physical examination skills as it relates to acutely ill medical patients.[K,S] Demonstrate ability to systematically evaluate patients presenting to the emergency department.[K,S] Demonstrate ability to draw up an initial management plan for the acutely ill patient.[K,S]	20%	I – VI	4	1 – 7.	MCQ, Essay, OSCE Log Book
<b>Management of the Critically Ill Patient.</b>	Learn the pathophysiology of trauma, toxins, shock, sepsis, cardiac failure, and respiratory failure that affect critically ill patients.[K] Demonstrate the ability to rapidly identify and evaluate critically ill patients. [K,S] Learn the indications for admission into	20%	I – III	4	1 – 7.	MCQ Essay OSCE

	different level of advanced care.[K] Learn the general principles in the management of critically ill patients. [K]					
<b>Cardio-pulmonary Resuscitation</b>	Understand the etiologies and pathophysiology of cardiac arrest.[K] Learn to recognize the dysrhythmias associated with cardiac arrest and their treatment.[K,S] Learn the American Heart Association recommendations and develop skill in the performance of standard resuscitative procedures.[K,S] Learn the principles of pharmacotherapy and the routes and dosages of drugs recommended during cardiac arrest and following resuscitation.[K] Learn the indications for withholding and terminating resuscitation.[K]	20%	I – VI	4	1,2,3,4,5,6,7	MCQ, Essay OSCE Log Book
<b>Basic Procedures in Emergency Medicine and Critical Care</b>	Demonstrate ability to perform common procedural skills including:[K,S] i. Gastric intubation, ii. Basic airway management. iii. Placement of central venous lines, iv. Wound closure v. Abscess incision and drainage.	15%	I – VI	3		MCQ  Essay  OSCE  Log Book
<b>Ethics in Emergency Medicine and Critical Care</b>	Learn basic ethical principles relevant to emergency medicine and critical care.[K] Apply ethical principles to specific patient encounters to assist in decision making.[K,S,A] Learn basic legal principles relevant to emergency medicine and critical care.[K] Learn the similarities and differences between legal and ethical principles relating to emergency medicine and critical care.[K]	10%	I – III	2	1,2,3	MCQ,  Essay

### 2.4.13 Clinical Haematology and Medical Oncology

Course title	Specific topics, knowledge, attitude and skills	Mode of delivery	% of course coverage	Learning objectives <i>(Levels using taxonomy)</i>	Total credit units	Assessment methods
BASIC HAEMATOLOGY	To describe and comprehend the physiology of Haemopoiesis.	1,2,3,4,5,6	5%	I,II	0.5	MCQs, ESSAYS
	To elicit symptoms and signs and make appropriate diagnosis of anaemia.	1,3,4,5,6	5%	I,II,III	0.5	MCQS, ESSAYS, CLINICALS /PRACTICALS
	To elicit symptoms and signs and make appropriate diagnosis of polycythaemia.	1,3,4,5,6	5%	I,II,III	0.5	MCQS, ESSAYS, CLINICALS /PRACTICALS
	To elicit symptoms and signs and make appropriate diagnosis of thrombocytopaenia/ thrombocytosis.	1,3,4,5,6	5%	I,II,III	0.5	MCQS, ESSAYS, CLINICALS /PRACTICALS
	Discuss basic investigations and comprehend diagnosis of haematological diseases. FBC and peripheral film , ESR, , PT, PTTK and Bleeding Time (Including indications, contraindications and precautions of procedures; BMA and Trepine)	1,3,4,5,6	5%	I,II,III	0.5	MCQS, ESSAYS, PRACTICALS
HAEMOGLOBINOPATHIES EMPHASIS ON SICKLE CELL DISEASE	Outline the definitions, describe the epidemiology, explain the pathophysiology of crises, identify the clinical features, investigations, and outline the management.	1,3,4,5,6,7	30%	I,II,III	2	MCQS , ESSAYS, CLINICALS
MEGALOBlastic ANAEMIAS	Describe the epidemiology, explain the	1,3,4,5,6	15%	I,II,III	1	MCQS, ESSAYS, CLINICALS/



	pathophysiology, clinical features, list investigations, and participate in the management.					PRACTICALS
IRON DEFICIENCY ANAEMIA	Describe the epidemiology, causes and metabolism, clinical features, list investigations, and participate in the management.	1,3,4,5,6	10%	I,II,III	0.5	MCQS , ESSAYS, CLINICALS/ PRACTICALS
ANAEMIA OF CHRONIC DISEASE	Definition, list the causes, explain the pathogenesis, clinical features, outline investigations, and management	1,3,4,5,6	10%	I,II,III	0.5	MCQS , ESSAYS , CLINICALS
LYMPHADENOPATHY AND SPLENOMEGALY	Definition, list the causes, explain hypersplenism and hyposplenism, outline investigations and management	1,3,4,5,6	10%	I,II,III	0.5	MCQS, ESSAYS, CLINICALS
<b>TOTAL UNITS</b>					<b>7</b>	

**Mode of delivery:** Lectures-1, tutorials-2. Seminars-3. Clinical/practicals-4, self-directed learning-5, assignments-6, conference- 7

**Learning objectives:** knowledge-I, comprehension and application- II, Analysis, synthesis and evaluation-III

#### **2.4.14 Rheumatology**

1. Structure and function of the musculoskeletal system
2. Classification of rheumatological diseases
3. Mono and polyarthritis
4. Connective tissue diseases
5. Inflammatory polyarthritis
6. Autoimmunity and autoimmune disorders
7. Degenerative arthritis
8. Back pain
9. Rational use of NSAIDs
10. Disease Modifying Antirheumatic Drugs (DMARD)
11. Biological agents
12. Crystal arthritis
13. Osteoporosis: risk factor, features, management and prevention
14. Systemic vasculitis syndrome

#### **2.4.15 Infectious Diseases and tropical medicine**

1. Sepsis: severity, complications, investigations, community acquired and nosocomial infections
2. Antimicrobial therapy: rationale. Effect of co-morbidities; antibiotic resistance.
3. Principles of microbiological investigations and interpretations
4. Prophylaxis: immunoprophylaxis and chemoprophylaxis
5. Acute infections.
6. Sepsis and shock. Toxic shock syndrome
7. Sepsis in the neutropenic patient
8. HIV/AIDS
9. Parasitic infections and infestations including malaria
10. Snake bites
11. Haemorrhagic fevers
12. Emerging and re-emerging infections

#### **2.4.16 Psychiatry**

1. Parasuicide: risk factors, evaluation
2. Acute psychosis: mental state examination, initial emergency management
3. Organic Brain Syndrome
4. Bereavement: stages, unusual grief reactions. Breaking bad news.
5. Depression: differential diagnosis, investigations, risk factors
6. Neurology-psychiatry interface
7. Bipolar disorders
8. Schizophrenia

### 2.4.17 Investigations

#### Aims:

Trained physicians of the programme should be competent and confident in selecting, requesting appropriately and interpreting accurately reports of commonly used investigations required for diagnosis and management of patients with general medical problems. The internist should be able to describe to the patient the nature of the investigation, why it is required and the implications of the expected results.

For the following investigations, Junior Resident should ascertain the indications, contra-indications and complications; recognize and interpret abnormalities which require immediate action.

- FBC and ESR, CRP
- Urea and electrolytes
- Plasma glucose, Glucose tolerance test
- Cardiac markers
- Liver function tests
- Thyroid function tests
- Amylase
- Calcium and phosphate
- Coagulation studies
- Arterial blood gases
- Lipids
- Serology
- Auto antibodies
- ECG and Echo: normal patterns, common abnormalities
- ECG – 12 lead
- Exercise ECG
- Holter monitoring
- Echocardiography
- EEG and EMG
- Chest X-Ray
- Abdominal X-Rays
- Contrast studies
- CT scan/MRI
- Ultra sound scans
- Doppler scan
- VQ scans: pattern of common abnormalities
- Radioisotope scans. Thyroid, bone
- Pulmonary functions tests, indications, pattern of abnormalities
- Microbiological samples – types, indications, collections, microbial sensitivity and specificity, special tests for multi-drug resistant tuberculosis. Interpretation.
- Tumor markers
-

#### 2.4.18 Special Procedures and investigations

**Aim:** For the following procedure/ investigations, Junior Resident should be able to recognize the indications for; complications of and accurately interpret reports from investigations in medical management:

- Catheterization and coronary angiography
- Other vessel angiography
- Transoesophageal echocardiogram
- Pharmacological stress testing and nuclear cardiology stress testing
- Upper and lower GI endoscopy
- Colonoscopy
- Contrast studies in GI urinary tract
- Endoscopic retrograde cholangiopancreatography
- Imaging
- Pleural aspiration
- Pleural biopsy
- Bronchoscopy
- CT/MRI scans
- Bone marrow examination
- DTPA renal scans
- Renal biopsy
- Liver biopsy
- Skin biopsy

### 2.4.19 Practical Procedures

For the following investigations, Junior Resident should be confident and competent to perform these common practical procedures required for diagnosis and management of patients with general medical problems. For each procedure, the Junior Resident should know the indications and contraindications and be able to:

1. Explain procedures to patient/relatives, obtain consent
2. Prepare the equipment
3. Prepare the patients
4. Prepare the skin including administration of local anaesthetic agent
5. Patch test, prick test, skin snips, cryotherapy, KOH preparation
6. Arrange after care monitoring
7. Safely dispose of disposable equipment
8. Document the procedures in the records and record complications
9. Label samples and complete forms
10. Consult past procedural order
11. Record them

Junior Resident should be competent and confident to perform:

- An ECG
- Arterial blood sampling
- Elective DC
- Insertion, pressure measurement and care of CVP line
- Use a temporary pacing box and external pacing machine
- Pleural and ascetic fluid aspiration
- Intestinal drain, insertion and management
- Nasal support, ventilation
- Knee joint aspiration
- Protoscopy
- Lumbar puncture

## 2.5 Assessment

This should be formative and summative in nature.

### 2.5.1 Formative-

This assessment is performed at the training institutions and aims at monitoring the resident's knowledge and skills during the period of training, thereby forming the basis of feedback mechanism. This form of assessment is achieved using the following instruments-

#### i. Annual evaluation form

#### ii. Log book

This should assess knowledge, skills and attitudes through the following methods:

1. Evaluation by superiors, peers, juniors and patients.
2. Logged performances/records
3. End of rotation assessment: clinical, MCQs, essays, summary assessment etc
4. Resident portfolio (desirable, not mandatory)
5. End of first and second year assessment – summary, assessment, log book, evaluation, clinical (traditional or OSCE) and written papers.

The result of (5) should be communicated to the Faculty secretary annually.  
Log book of cases and procedures must be brought to the final examination.

**2.5.2 Summative-** This form of assessment consists of the part I fellowship examination

### Part 1 FMCP Examinations

#### a. Entry requirements:

The eligibility criteria for admission to sit the part I examination are that the candidate must have:

1. Passed the primary examination or has been exempted from it. In either case, the appropriate evidence must accompany the application form. Exemption from primary examination must have been granted at least 12 months before applying for the part I examination.
2. Have undergone mandatory training in clinical internal medicine for not less than 24 calendar months in the approved (accredited) training programme after passing the primary examination -as detailed under sections 2.3,2.3.1.2.3.2.2.3.3 and 'Rotations' under appendix III . Evidence or certification of training provided by the programme director of the department's institution must accompany the application. Certification must provide details of clinical experience by rotation through various units of internal medicine. Time credits may be granted for periods of training in the non-accredited institutions on application to the Faculty Board. Such application should be sent with documentary evidence of training and procedures performed.
3. Be certified by the Head of Department and a fellow of the Faculty, other than the Head of Department, as being of good behavior and a proper and fit person to be admitted into the Faculty as a Fellow.



4. Attended at least one revision course organized by the Faculty not more than the preceding year

The invitation to submit applications for the examination is usually advertised in the national dailies and can also be obtained from the college web site ([www.npmcn.edu.ng](http://www.npmcn.edu.ng)).

**b. Structure of Part 1 Examinations:**

The Part 1 examination shall be held twice a year. It shall consist of three parts in a staggered pattern—written, clinical and viva-voce.

**1. Written Examination**

This consists of two written papers. Paper 1, a 3-hour multiple choice with a mix of true/false, one best answer and matching types objective paper containing 200 stem questions in all aspects of internal medicine.

Those who are found eligible proceed to Paper II and the Clinical examination.

Paper II is a 3-hour essay type question paper covering different areas of the discipline.

**2. Clinical Examinations**

**OSCE**

The Objective Structured Clinical Examination is one clinical session in which the skills, knowledge and attitudes, history taking and other goals and objectives in the syllabus will be fully tested within 120 – 150 minutes.

Distribution of marks and consideration for a pass:

Written papers

MCQ	150
Essay	100
OSCE	400

The MCQs shall consist of a mix of true/ false, one best in five, and matching types.

Essay questions shall include pathophysiology, procedures and diseasemanagement, including tropical diseases

**c. Conditions for a pass**

For the candidate to pass, he or she must:

- i. Obtain an overall pass mark of 325 or more
- ii. Obtain a mark of 200 or more in the clinical examination.

### **3.0 APPENDICES**

#### **APPENDIX I- TRAINING AND ASSESSMENT FOR PRIMARY FMCP**

The mode of instructions is mainly in the form of self-directed learning. The scope of the examination will cover basic physiology, biochemistry, pathology, pharmacology and applied anatomy. In addition, knowledge of principles and practice of general Internal Medicine will be required.

##### **Requirements for primary examination**

- Basic Medical degree from an MDCN accredited institution
- Certification by a Fellow or current Head of Department
- Full registration by MDCN

##### **Structure of the primary examination**

- 100 Multiple Choice Questions
  - Best of Five options
  - True/False type
  - Matching

##### **Conditions for a pass:**

- A pass score of minimum of 50%
- Primary Exam validity – 5 years

## **APPENDIX II- CURRICULLUM DEVELOPMENT/REVIEW PROCESS**

The previous curriculum was circulated to all the subspecialty chairmen and members of the court of examiners for their inputs. Thereafter, at the Faculty training of the trainers workshop held in 2014, participants from all training institutions made useful contributions. A harmonization committee was set up that finalized the review process. Upon completion of the task by the harmonization committee, the draft document was submitted to the Faculty board of internal medicine and thereafter presented to docimology committee. The final document was subsequently approved by the senate of the college after passing through three readings.

It was agreed that curriculum should be reviewed every five years.

**APPENDIX III: COURSE CREDIT WEIGHING OF SYLLABUS**

<b>Contact Hours and Credit Points for Part 1 FMCP Junior Residency 24 months</b>							
Posting	Duration (Months)	Contact Lecture Hours/Week	Contact Clinical Hours/Week	Total Contact Hours/Week	Total contact lecture hrs/course duration	Total contact clinical hrs/course duration	Credit Units
*Endocrinology	3	13	28	41	156	336	20
*Gastroenterology	3	13	28	41	156	336	20
*Cardiology	3	13	28	41	156	336	20
*Neurology	3	13	28	41	156	336	20
*Nephrology	3	13	28	41	156	336	20
*Respiratory	3	13	28	41	156	336	20
*Dermatology	3	13	28	41	156	336	20
**Emergency	1	13	28	41	52	112	7
†CPT/Rheu/Inf Dx/Cli Haem/Ger	1	13	28	41	52	112	7
††Laboratories	2	13	28	41	104	224	14
**Radiology	1	13	28	41	52	112	7
**Psychiatry	1	13	28	41	52	112	7
†††Compulsory Update Course		35					5
<b>Total</b>	<b>24</b>	<b>178</b>	<b>308</b>	<b>451</b>			<b>167</b>

\*Candidates are expected to rotate through any six.

\*\*Candidates must rotate through this course

†Candidates are expected to rotate through at least one of the four.

††Candidates are expected to spend 2 weeks each in: Medical Microbiology and Parasitology; Chemical Pathology; Morbid Anatomy; Haematology.

†††Compulsory Update course runs over a 2-week period during one of the rotations

**BASIS FOR CREDIT LOAD**

**LECTURE HRS:**

2 HR Lecture/day x5 days=10 cont HRs

2HSCase review /week= 2 cont. HRs

1HR Journal review/week=1 cont. HR

Total lecture hours= 13/week

**CLINICAL CONTACT HRS:** Clinic 4hrsx 2 a week (8) + wd round 4 hrsx2 (8) + call duty 12 hrs/week (12) –TOTAL  
CLINICAL .CONTACTL HRS =28HRS

**ROTATIONS FOR JUNIOUR RESIDENCY IN INTERNAL MEDICINE COVERING 24 MONTHS**

**MANDATORY ROTATIONS I**

POSTING	DURATION	TOTAL DURATION
1. CARDIOLOGY 2. DERMATOLOGY 3. ENDOCRINOLOGY 4. GASTROENTEROLOGY 5. NEPHROLOGY 6. NEUROLOGY 7. PULMONOLOGY	TO SPEND 3 MONTHS EACH IN ANY SIX OF THE SEVEN POSTINGS	18 MONTHS

**MANDATORY ROTATIONS II**

POSTING	DURATION	TOTAL DURATION
1. EMERGENCY MEDICINE 2. PSYCHIATRY 3. RADIOLOGY	TO SPEND ONE MONTH IN EACH POSTING	3 MONTHS
4. LABORATORY MEDICINE	TO SPEND 2 WEEKS EACH IN CHEMICAL PATOLOGY, HAEMATOLOGY, MEDICAL MICROBIOLOGY AND MORBID ANATOMY POSTINGS	2 MONTHS

**OPTIONAL/ELECTIVE ROTATIONS**

AREA/SPECIALTY/SUBJECT	DURATION	TOTAL DURATION
1. CLINICAL PHARMACOLOGY & THERAPEUTICS 2. CLINICAL HAEMATOLOGY 3. GERIATRICS 4. INFECTIOUS DISEASES 5. RHEUMATOLOGY	TO SPEND ONE MONTH IN ANY ONE OF POSTING	1 MONTH

**APPENDIX IV – ANNUAL PROGRESS REPORT**

**To be completed in Accredited institutions in approved proforma and submitted along with registration documents for examinations (see below)**

**NATIONAL POSTGRADUATE MEDICAL COLLEGE OF NIGERIA**

Indicate Associate Fellow's No.  
.....  
.....



Indicate Faculty  
.....  
.....

**ANNUAL PROGRESS REPORT ON REGISTERED RESIDENTS  
ASSOCIATE FELLOWS OF THE COLLEGE**

*The completed form must reach the Training and monitoring (TAM) office of the College before 31<sup>st</sup> of January of immediate post assessment year.*

*This section below to be completed by Associate fellows*

**SECTION A.**

**ASSESSMENT PERIOD /YEAR:** .....

- 1. Name of Resident: .....  
Surname                      Middle name                      Other name
- 2. Accredited training institution: .....      3. Training department:.....
- 4. Date Residency Training began .....
- 5. Fellowship Examination Passed:  
a) Primary Fellowship: Yes/No/Exempted Date ..... b) Part One Fellowship: Yes/No/Exempted Date.....
- 6. Date of Fellowship examination in view:  
a. Part One ..... Part Two .....
- 7. (a) Ongoing research topic in your department in which you are involved .....

- (b) Level of involvement in research (1) Conceptualization of the study (2) Literature Review (3) Design of the study  
 (4) Implementation and data collection (5) Data analysis /Draft report writing (6) Critical Review/Finalization for  
 report writing
- (c) Name of Project Coordinator .....
- (List (a) – (c) for each study on extra sheet if more than one)

8. Continuing Professional development:

(a)

<i>Conferences attended in the current year</i>	<i>Date/Venue</i>	<i>Title of paper Read</i>

*\* To attach certificate of attendance*

(b)

<i>Update Courses attended</i>	<i>Date/venue</i>	<i>Name of organizing body</i>

*\* To attach certificate of attendance*

9. Declaration by the Resident:

I hereby declare that the information stated above is to the best of my knowledge and belief accurate in every detail.

Names ..... Signature and date .....



**SECTION B**

10. This section should be filled by supervising Consultants or Trainers

*Clinical postings satisfactorily completed in the current year under view*

Clinical postings	Duration	Objective Assessment														Name & signature of supervising consultant: (minimum of two)	
		10	10	10	10	10	10	10	10	10	10	10	10	10	10		10
		Cognitive Knowledge	Clinical Judgment	Ability to cope with emergencies	Level of Motivation	Capacity for independent learning	<b>Communication Skills</b>				Research	Administrative/Management	<b>Ethical behaviour</b>				
						Competence in Writing essay	Competence in Case presentation	Competence in writing	Competence in Journal review	Teaching		● Dedication	●● Reliability	Relationship with Colleagues	Doctor/Patient Relationship	Ethical & Professional Conduct	
Global assessment statement																	

Rating Scale Score over 10

8-10	Excellent (A)
6-7	Good (B)
5	Average (C)
<4	Poor (D)

**REMARKS** ● Encompassing punctuality, availability concern for patient, perseverance and problem solving  
 ●● Encompassing reliability initiative and commitment

A doctor considered to be below average in the global assessment should not be eligible to sit for the Fellowship Examination for the current year.

● Period of strike action or leave of absence should not be counted as part of training.

A score of "D" in Ethical and Professional conduct during the posting should attract a sanction and this should reflect in the global assessment statement.

11. In course assessment examinations conducted by the training department

<i>Examination</i>	<i>Scores</i>	<i>Remark</i>
<i>MCQ</i>		
<i>WRITTEN</i>		
<i>CLINICALS CASES:</i>	<i>SHORT</i>	
	<i>LONG</i>	
<i>OSCE</i>		
<i>VIVA VOCE</i>		

12. *CERTIFICATION BY DEPARTMENTAL TRAINING COMMITTEE*

We hereby certify and attest that Dr. ....

- (a) Satisfactorily/ unsatisfactorily completed the year under review, in the Residency Training Programme in the specialty of .....of this Institution.
- (b) Obtained the Grades stated above and passed/failed the departmental continuous assessment examination appropriate for his/her current level of Residency Training.

13. **RECOMMENDATION (Mark as appropriate)**

1. All considered, this resident is/is not making satisfactory progress. This resident may/should not proceed to the next phase of training.

2. This resident needs remedial attention to:

Cognitive Knowledge Yes/No Technical Skill Yes/No Communication Skills Yes/No Ethical behaviour Yes/No

3. This resident should specifically repeat the training period in

.....  
 .....

Trainers:

1. *Names* .....  
*Signature & Date* .....  
*Fellowship Qualification & Date obtained*.....

2. *Names* .....  
*Signature & Date* .....  
*Fellowship Qualification & Date obtained*.....

3. *Names* .....  
*Signature & Date* .....  
*Fellowship Qualification & Date obtained*.....

4. *Names* .....  
*Signature & Date* .....  
*Fellowship Qualification & Date obtained*.....

5. *Names* .....  
Head of Department:  
*Signature & Date* .....  
*Fellowship Qualification & Date obtained*.....

**Official Stamp:**

*If more than five consultants please attach additional sheet*

14. To be completed by the Chief Medical Director or Director of Training Institution

This institution has taken due note of DR.....

and the required action has been taken.

Signed.....

Chief Medical Director  
or  
Director of Training

*The CMD or the Head of the Training Institution should return the endorsed form back to the Head of the Department  
This form should be forwarded to the Officer in charge of Training and Monitoring (TAM) of the NPMCN by Head of  
Department after the CMD endorsement.*

15. To be completed by the Secretary Faculty of .....

The Faculty Board has taken due note of the performance of: DR.....

Signed.....

Faculty Secretary

16. To be completed by the College Registrar

The report has been duly noted

Signed.....

College Registrar