

CURRICULUM



M.D
(GENERAL MEDICINE)
DEPARTMENT OF GENERAL MEDICINE

**Peoples University of Medical & Health Sciences,
Nawabshah, Sindh.**

OBJECTIVE

At the end of the MD course in Medicine, the student should be able to:

1. Recognize the key importance of medical problems in the context of the health priority of the country;
2. Practice the specialty of medicine in keeping with the principles of professional ethics;
3. Identify social, economic, environmental, biological and emotional determinants of adult medicine and know the therapeutic, rehabilitative, preventive and promotion measures to provide holistic care to all patients;
4. Take detailed history, perform full physical examination and make a clinical diagnosis;
5. Perform and interpret relevant investigations (Imaging and Laboratory);
6. Perform and interpret important diagnostic procedures;
7. Diagnose medical illnesses in adults based on the analysis of history, physical examination and investigative work up;
8. Plan and deliver comprehensive treatment for illness in adults using principles of rational drug therapy;
9. Plan and advise measures for the prevention of medical diseases;
10. Plan rehabilitation of adults suffering from chronic illness, and those with special needs;
11. Manage medical emergencies efficiently;
12. Demonstrate skills in documentation of case details, and of morbidity and mortality data relevant to the assigned situation;
13. Demonstrate empathy and humane approach towards patients and their families and respect their sensibilities;
14. Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities.
15. Develop skills as a self-directed learner, recognize continuing educational needs; use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based medicine;
16. Demonstrate competence in basic concepts of research methodology and epidemiology;
17. Facilitate learning of medical/nursing students, practicing physicians, para-medical health workers and other providers as a teacher-trainer;
18. Play the assigned role in the implementation of national health programs, effectively and responsibly;
19. Organize and supervise the desired managerial and leadership skills;
20. Function as a productive member of a team engaged in health care, research and education.

GENERAL INFORMATION

ELIGIBILITY FOR ADMISSION IN MD GENERAL MEDICINE

1. Student must have a MBBS Degree from PMDC recognized institute and completed one year House Job (Six months in Medicine in mandatory).
2. The candidate must get himself/herself registered with Director Post – graduation under approval supervisor within 02 weeks (private PG's) three months (In – service PG's) selection, after passing MD Part I.
3. The candidate must Pass MD Part – I (Basic Sciences) examination, to get admission in Part II course/training under the supervision of approved supervisor of University.

DURATION OF TRAINING IN MEDICINE

- Total duration of training is four years which consist of at least three years in General Medicine and one year for rotation in following subspecialties.

ROTATIONS

- Six rotations of two months each is to be carried out in the following subspecialties.
 1. Intensive Care Medicine (mandatory)
 2. Cardiology (mandatory)
 3. Pulmonology
 4. Neurology
 5. Nephrology
 6. Psychiatry
 7. Dermatology
 8. Oncology
 9. Radiology
- Candidate is allowed for rotation to another institute if chosen subject specialties is not available in this institute.

COMPONENTS OF TRAINING

A. MANDATORY WORKSHOPS

The candidate has to attend the following mandatory workshop.

1. Computer and internet.
2. Research, methodology and dissertation writing.
3. Communication Skills.
4. Basic life support.

B. SNOPSIS

Should be submitted within 1 year after registration.

C. THESIS

The candidates has to submit the approved thesis six months before MD II exam.

D. LOG BOOK

The candidates are required to maintain a prescribed log book with exercise of Academic session, procedures carried out and seminars/symposia attended during the four year tenure duly signed by supervisor/incharge. The log book is to be submitted to the examination Department along with MD Part-II examination form.

ROLE OF THE SUPERVISOR

The supervisor has to play a pivotal role in training of the candidates by imparting theoretical and practical knowledge with them. The supervisor is person with post – graduation reorganized by the PUMHS having vast experience of teaching and administration.

- The prime role of supervisor is to impart knowledge to the trainee in order to train him to diagnose and manage the acute and chronic medical problems with responsibility and efficiency.
- He is responsible to provide a conducive atmosphere for trainee learning.
- He should help out the trainee at any time of difficulty with open heart.
- He should make the trainee capable of internship the finding or laboratory investigation and act accordingly.
- The supervisor require to maintain a liaisonship with Director PG and examination department for uninterrupted training of the candidate.
- He required to inform the authorities any misconduct and irregularity of the candidates of the candidates in due time.
- He is required to ensure that that the trainee has completed the training in stipulated time as per requirement of the Syllabus.

- He is required to submit a detailed report on the performance of candidates to Director Postgraduation every year without any bias and inclination.

Prof. ...

RESPONSIBILITIES OF TRAINEES

Having provided the conducive atmosphere by the university the trainees are required to engage themselves in acquiring knowledge and enhance their capabilities in dealing with the patients in the stipulated period.

- * The trainee should acquire a complete knowledge of the course he is entering in order to prepare himself / herself for the future.
- * He / She should select his / her supervisor at his / her own will.
- * He / She should undergo his / her training with due sense of responsibility and dedication.
- * He / She should select a reasonable and applicable topic for thesis in consultation with his supervisor and plan for the research on the approved topic within the time allocated.
- * He / She is required to submit his / her thesis duly signed by the supervisor six months a head of the examination.
- * He / She is required to fulfill all the requirement appearing in the examination.

(II) STRUCTURE

DURATION OF TRAINING

This will entail a total of at least FOUR years of training, which should consist of

1. at least 3 years in a general medical unit receiving acute admissions and having facilities similar to Tertiary care Hospital.
Such units should require trainees to:
 - i) Function at increasing grades of seniority and to exercise correspondingly increased responsibilities.
 - ii) undertake regular resident on-call duties for inpatients,
 - iii) manage patients attending Specialist Medical Outpatient Clinics, and
 - iv) participate in research
2. Experience obtained through working in other working in other medical specialties in parallel with Internal Medicine (IM) is encouraged and will be accredited accordingly.

The program comprises four year of training.

4 YEAR TRAINING SCHEDULE

- 1ST Year Internal Medicine
- 2nd Year Internal Medicine 8 months
Rotation 4 months
- a. Cardiology 2 months
 - b. Dermatology 2 months
 - c. Psychiatry 2 months.
- 3rd Year Internal Medicine 8 months
Rotation 4 months
- a. Radiology 2 months.
 - b. ICU 2 months.
 - c. Nuclear Medicine 2 months.
 - d. Nephro – Urology 2 months
 - e. Radiology 2 months.
 - f. Pulmonology
 - g. Neurology

Candidate has to undergo rotation in any three of the above subspecialties.

- 4th Year Internal Medicine / Research.

FIRST YEAR OF TRAINING

1. Enrolment with University within first two weeks after admission.

2. REGISTRATION AS RESEARCH SCHOLAR

The post graduate student is required to chose a topic of research and write a synopsis on the topic within one year of admission, to be evaluated by the scrutiny committee of Medicine and than by Advance Studies & Research Board for final registration.

In this first year of residency, the resident will be responsible for clerking, admitting and managing General Medicine. Experience of working with physicians will be obtained through attachment with various team. Resident has to attend rounds participate in case discussions, seminars and Journal clubs through out his full training.

YEAR II SECOND YEAR TRAINING

In the second year, the resident will rotate for 4 months along with his routine in ward for 8 months.

YEAR III THIRD YEAR TRAINING

During the third year of training the postgraduate scholar will rotate in sub specialist mentioned above besides training in Internal Medicine & has to complete all remaining rotations.

YEAR VI FOURTH YEAR TRAINING

The whole final / fourth year training will be spent in Internal Medicine. During this year of training the postgraduate scholar will be allowed to work as junior Consultant in the Department. He will be allow to take independent decisions regarding diagnosis, management and treatment of different cases. Most of the time in final year will spent on cases discussions, case presentation, seminar presentations and teaching of Undergraduates.

(III) JOB DESCRIPTION / DUTIES / RESPONSIBILITIES OF POST GRADUATE SCHOLAR

1. Case presentation with Supervisor. One case/15 days i.e. 24 cases/year.
2. Continue working for case collection of thesis and writing of thesis
3. Seminar presentation 01 per 03 months
4. Lecture delivery 01 per 02 months
5. 3rd MBBS year teaching.
6. Continue writing thesis & complete collection of cases
7. House officers teaching
8. Submission of thesis

ON-CALL DUTIES:

Each post graduate resident does an average of one night in four on-call within the Hospital premises, although occasionally one night in three may be necessary.

LOG BOOK

Postgraduate must keep proper and updated records in their log books to reflect the following main activities

a) Case Management Data

A record of patients managed, operative procedures, audit or outcome, learning points etc.

b) Research

Postgraduate should learn basic research methods and are encouraged to participate in research

c) Courses And Lectures

Postgraduates are expected to attend courses, seminars, lectures and other continuing medical education activities in the specialty throughout the training period. All such activities should be duly recorded in the log book.

d) Teaching

Postgraduate should be involved in teaching of junior doctors, medical students and paramedical staff.

e) Papers Presented At Meetings

The Postgraduate is encouraged to present papers at local, regional and international conferences.

(IV) DIDACTIC TRAINING

Over the four years of postgraduate training, different didactic lectures are presented to internal medicine residents. The didactic portion of Department of Medicine Postgraduate program includes:

- Weekly Grand Rounds
- Pulmonary, Cardiology, Gastroenterology, Oncology and Neurology Conferences are held on routine basis.
- Practice guideline and research presentation
- Core Curriculum Conference
- Morbidity and Mortality (M & M) meetings.
- Clinical Decision Making Journal Club.
- Morning Report (Inpatient and Outpatient)
- Evidence-Based Medicine Didactic Conference
- Slide sessions

A comprehensive, four-year didactic core curriculum addresses both inpatient and outpatient medicine.

(V) GENERIC SKILLS

Introduction

During training all postgraduate require skills that are irrespective of the specific training post and are 'generic' to all doctors. There is an exciting opportunity to build upon skills already established as an undergraduate. To give PG's and trainer's guidance to recognize opportunities for learning, to reflect on clinical practice and to become self-outlined for the following:

'Generic skills':

- Good clinical care
 - History-taking, examination and note-keeping skills
 - Time management, risk management and decision making
 - Basic life support
- Maintaining good medical practice
 - Learning
 - Evidence, audit and guideline
- Communication skills

Within a consultation
Breaking bad news
With colleagues
Complaints

- Working with Colleagues (team working)
- Maintaining trust
 - Professional behavior
 - Ethics and legal issues
 - Patient partnership and health promotion
- Teaching & Training

These objectives should not restrict learning, they do however, outline the minimum requirements for satisfactory completion of postgraduate clinical training.

PRINCIPLE AREAS OF COMPETENCE

- a) Clinical expertise and judgment.
- b) Ability to establish effective relationships with patients.
- c) Leadership and personal management skills.
- d) Organisation, Planning and Service management skills.
- e) Education and mentoring abilities.
- f) Quality standards, effectiveness, research and development skills.

a) Clinical Expertise and Judgment

I. Basic Clinical Skills:-

- The ability to obtain a reliable history and elicit abnormal physical signs.
- The ability to interpret findings and the result of investigation.
- The ability to perform the defined practical procedure needed for the management of medical emergencies.

II. Clinical Reasoning:-

- The ability to assess and diagnose complex medical problems, particularly those involving multiple systems and determine their relative priority.

III. Expert Management

- The ability to investigate clinical problems in prioritized, systemic, well informed and cost effective way.

- * The ability to recognise and manage all major medical emergencies and other acute presentations of illness affecting concurrently one or more organ systems.
- * This should include the administration of all necessary immediate care and be in an appropriate evidence-based way.
- * Expertise in the ongoing care and management of chronic disease including preventive and public health medicine and the community aspects of disease.
- * The ability to determine the appropriate time and conditions when referral to another specialist is indicated or transfer to a specialist unit.
- * The ability to manage patients in a holistic way, considering all psych-social as well as medical factors for improving quality of life.
- * The ability to plan and achieve successful patient discharge from hospital, including knowledge of the various discharge options.
- * The ability to determine when the emphasis of treatment should change from the curative to the patients whose prognosis is limited.

Establishing Effective Doctor / Patient Relationships

Communication Skills

The ability to promote and cooperation, and to help patients cope with distressing or other emotions, and the following skills:-

- Active listening
- Understanding the need for and enabling the ventilations of feelings.
- Warmth, support and empathy.
- Respect, guidance, partnership.
- The ability to educate and motivate patients towards co-operating with advice and to demonstrate the following skills: elicitation of existing views/knowledge.
- Offering clear explanation and instructions checking understanding, evaluating.
- Problem using positive attribution and praise.
- The ability to deal with special situations e.g. breaking bad news to patients.
- Relatives other sensitive issues; preparation for threatening procedures obtaining.
- Informed consent; Conducting family conference; dealing with complaints etc.

ii) Ethical principles

- The observation of clear ethical principles such as dignity of patients their right to privacy and confidentially. Their right to the best possible care. The right autonomy and informed consent. Their right to decline treatment or to take part in teaching or research decline treatment or to take part in teaching or research etc.

c) Leadership and personal management skills:

Personal achievement

- The ability to exercise independent judgment and clinical self-confidence. The ability to be self-directed and to achieve objectives. The ability to have high internal standards and a desire to improve. The ability to maintain effective work performance under pressure when appropriate and to cope with ones own emotions.
- The ability to accept and act on constructive criticism.

ii) Interpersonal skills:-

- The ability to initiate, build and maintain good relationships, both one to one and in groups.
- The ability to lead by example.
- The ability to put oneself in the place of another and correctly interpret their concerns and feelings.
- The ability to calculate in advance the likely effect of ones words or actions on an individual or group in order to bring about a desired effect.
- The ability to time ones actions or interventions in order to maximize their effectiveness.

iii) Managing Others:-

- The ability to get others to work effectively by planning and delegating work.
- The ability to coach and supervise others and give clear feedback about performance, good or bad.

d) Organisation, Planning and Service Management skills

- The ability to conduct and administer a general medical service, including seeing patient referrals, dictating letters, summaries and reports etc.
- The ability to liaise and work effectively with professional colleagues particularly general practitioners and members of the multidisciplinary team.
- The ability to participate in committee work concerned with planning and organising services.
- The ability to supervise and work with medical & allied staff.
- The ability to develop a strategic view & health service management system.

e) Education and mentoring Skills

i) Being a Role Model

- The ability to set an example of good practice and be respected as a Physician.

Educational Supervision

- The ability to motivate, demonstrate and explain particularly the reason for clinical decisions.
- The ability to build relationships with trainees.
- The ability to use appropriate teaching methods and styles.
- The ability to assess the performance of trainees.

Quality Standard, Effectiveness, Research and Development Skills.

- The ability to plan and conduct clinical audit studies of aspects of the G(I) M service in order to improve service quality.
- The ability to present the results of audit or research to both small and large audience.
- The ability to evaluate research publications to assess their importance.
- The ability to reflect on clinical practice and plan future educational needs.
- To maintain an expert knowledge of the diagnosis and treatment of a broad range of common acute disorders through systematic continuing professional development.

(VI) COMPETENCE AT THE END OF TRAINING

At the completion of training the post graduate will have *demonstrated their competence in all the above listed abilities* to the satisfaction of their supervising consultants and / or their educational supervisor. In particular they should be able to *demonstrate*.

- The ability to diagnose, investigate and manage the patients independently and care for patients irrespective of the nature of the patients problems.
- The ability to select the patients who require care of other specialists.
- The breadth of clinical experience and competence in the management of the full spectrum to acute unselected medical emergencies.
- Their skills of diagnostic reasoning in the management of patients with complex problems, non-specific symptoms, atypical presentations and multi-system disorder.
- Their ability to demonstrate the knowledge, skills and attitudes contained in the syllabus.
- Their ability to perform the specified list of practical procedures.
- Their willingness to participate in the work of the multidisciplinary team.

SYLLABUS

- A. **Procedures**
- B. **Cardiology**
 - Ischemic Heart Disease
 - Congenital Heart Disease
 - Rheumatic Fever & Valvular Heart Lesions
 - Infective endocarditis
 - Palpitation and syncope
 - Erythemas
 - Hypotension and Shock
 - Hypertension and Complications
 - Heart Failure
 - Cardiomyopathies
 - Pericardial Diseases
 - Cardiac Diseases and Comorbidities
 - Drugs use in Cardiology
- C. **Hematology**
 - Anemias
 - Haemoglobinopathies
 - Neutropenia, Neutropenic sepsis
 - Bone marrow failure
 - Transfusion of blood products
 - Leukemia
 - Lymphomas and other myeloproliferative disorders
 - Multiple myeloma
 - Disorders of hemostasis
 - Platelet disorders
 - Bleeding disorders, Disseminated intravascular coagulation
 - Hypercoagulable state, Anticoagulation
 - Prevention of cancer, Staging of cancer
 - Oncological emergencies
 - Hypercalcemia
 - Malignant effusions
 - Drugs used for the management of these disorder
- D. **Blood Vessels and Lymphatics**
 - Arterial diseases (aneurysms, arteriopathies, occlusive and vasomotor disorder)
 - Venous disease
 - Diseases of lymphatic and lymphadenopathy
 - Drugs used for the management of these disorders
- E. **Blood vessels and lymphatics**
 - Degenerative and crystal induced arthropathies
 - Osteoporosis
 - Osteoarthritis
 - Autoimmune disease - SLE, Scleroderma, Polymyositis, Dermatomyositis.
 - Polymyalgia Rheumatica
 - Monoarthritis, infective arthritis
 - Seronegative spondyloarthritides
 - Rheumatoid arthritis and its variants
 - Vasculitic syndrome

- Atopic disorders
- Anaphylaxis, urticaria, angioedema
- Immunodeficiency disorders
- Immunosuppressives / Immunomodulating therapies
- Drugs used for the management of these disorders

F. Pulmonology

- Prevention of respiratory diseases
- Cough, Haemoptysis, Dyspnea
- Pneumonias, Lung Abscess
- Bronchiectasis
- Bronchial asthma, COPD
- Pulmonary tuberculosis
- Pleural effusion, Pneumothorax
- Lung Cancer
- Interstitial lung disease and fibrosis, Occupational lung disease
- Deep venous thrombosis/Pulmonary embolism
- ARDS/Respiratory failure
- Oxygen therapy, assisted ventilation
- Breathing disorders during sleep
- Drugs used for the management of these disorders

G. GI Tract and Liver

- Nausea, Vomiting, Hiccups, Dyspepsia
- GERD, Dysphagia
- Esophageal motility disorders
- Upper GI bleed, esophageal varices
- Gastritis, NSAID gastritis
- Peptic ulcer disease
- Diarrhea, Malabsorption syndrome
- Coeliac disease
- Irritable bowel disease
- Inflammatory bowel disease
- Intestinal motility disorders, constipation
- Antibiotic associated colitis
- Diverticulitis
- Lower GI and rectal bleed
- GI cancers
- Abdominal distension
- Jaundice, Acute hepatitis, Chronic hepatitis, Chronic liver disease
- Portal hypertension
- Decompensated cirrhosis
- Encephalopathy, Fulminant liver failure
- Diseases of pancreas, Gallbladder and spleen
- Drugs used for the management of these disorders

H. Nephrology

- Acute renal failure, chronic renal failure
- Glomerulopathies
- Nephrotic syndrome, Proteinuria
- Haematuria
- Urinary infections, Cystic diseases of Kidney
- Tubulointerstitial diseases
- Multisystem diseases with kidney involvement
- Drugs and kidney
- Renal replacement therapy

- Hypertension and kidney
- Urinary tract malignancies
- Kidney and pregnancy
- Drugs used for the management of these disorders
- f. **Dermatology**
 - Cellulitis
 - Cutaneous drug reactions
 - Herpes zoster
 - Disseminated herpes simplex
 - Pruritis
 - Cutaneous manifestations of systemic disease
 - Drugs used for the management of these disorders
- g. **Geriatrics**
 - Acute confusion
 - Falls
 - Hypothermia
 - Deterioration in mobility
 - Urinary incontinence
 - Drugs used for the management of these disorders
- h. **Neurology**
 - Headache, facial pain, discogenic Neck pain
 - Meningitis, encephalitis, Brain abcess
 - Epilepsy
 - Intracranial space occupying lesions
 - Benign intracranial hypertension
 - Raised intracranial pressure
 - TIAs, Stroke, Weakness and paralysis
 - Sub-archnoid haemorrhage, Coma
 - Parkinsonism, Spasticity, Other movement disorders
 - Dementia
 - Multiple sclerosis
 - Polyneuropathy
 - Motor neuron diseases
 - Subacute combined degeneration of spinal cord
 - Disorders of neuromuscular transmission, Myopathies, Periodic paralysis
 - Non metastatic complications of malignant disease
 - Drugs used for the management of these disorders
- i. **Infections, Disorders due to Physical agents and environment**
 - Fever of unknown origin
 - Sepsis syndrome
 - Infections in immunocompromised host
 - Nosocomial infections
 - Infections due to resistant organisms, MRSA, Mycobacterium
 - HIV, AIDS, Sexually transmitted diseases
 - Infections in drug users
 - Food poisoning, Acute infectious diarrhea
 - Active immunization against infections
 - Bacillary dysentery, travelers diarrhea
 - Typhoid and paratyphoid fevers
 - Malaria
 - Giardiasis, Amebiasis
 - Leishmaniasis, Toxoplasmosis
 - Helminthic infections

- Viral diseases
 - Rabies
 - Rickettsial diseases
 - Fungal diseases
 - Bacterial diseases
 - Chlamydial and spirochetal diseases
 - Antibiotics, antiviral drugs, anti fungal drugs,
 - Disorders due to physical agents and environment
 - Effects of heat and cold, electric shock, drowning, insect bite, snake bite, carbon monoxide.
 - Drugs used for the management of these disorders.
- M. Fluid, electrolytes, Acid Base Disorders Poisoning**
- Hypo and hyper natremia
 - Hypo and hyper kalemia
 - Hypo and hyper calcemia
 - Disorders of magnesium and phosphorus
 - Acid base disorders
 - Hyperosmolar disorders, anion gap
 - Fluid management
 - Poisoning
 - Drugs used for the management of these disorders.
- N. Endocrinology, Diabetes Mellitus, Lipid Disorders, Nutrition**
- Diabetes mellitus, Diabetic emergencies, hypoglycemia state
 - Diseases of hypothalamus, Pituitary gland
 - Disorders of thyroid and parathyroid and parathyroid glands
 - Adrenocortical deficiency
 - Cushing syndrome
 - Clinical uses of corticosteroids
 - Dyslipidemias
 - Metabolic bone disease
 - Nutrition, Enteral and parenteral
 - Drugs used for the management of these disorders

CLINICAL COMPETENCIES

The clinical competencies, a specialist must have, are varied and complex. A list of the core procedural competencies including those required during training in the Department of Medicine and the departments during rotations is given below. The level of competencies to be achieved each year is specified according to the key, as follows:

1. Observer status
2. Assistant status
3. Performed under supervision
4. Performed under indirect supervision
5. Performed independently

Note: level 4 and 5 for practical purposes are almost synonymous

COMPETENCY LEVELS

Competencies	1 year	2 year	3 year	4 year
1. Patient Management				
History Taking	2	3	4	4
Physical examination	2	3	4	4
Ordering & Interpreting Investigation	2	3	4	4
Assessing & implementing treatment	1	2	3	4
Maintaining follow-up records	2	3	4	4
Teaching/Training/Supervision of research	-	-	-	-

ROTATIONAL TRAINING

COMPETENCY LEVELS IN ROTATIONAL TRAINING

Procedure	Level	Cases
INTENSIVE CARE		
Endotracheal Intubation s	4	6
Insertion of CVP line	4	6
Arterial puncture	3,4	4
Mechanical ventilation	3,4	4
Cardio Pulmonary Resuscitation (CPR)	3,4	4
Blood gases interpretation	4	4
CARDIOLOGY		
Thrombolysis in acute MI	4	6
Management of arrhythmias	4	4
Drugs/defibrillation		
EKG recordings and reporting	4	6
Exercise tolerance test (ETT)	2,3	2
Echocardiography	1,2	4
Cardio Pulmonary Resuscitation (CPR)	4	2
PULMONOLOGY		
Pleural Aspiration	4	3
Pleural Biopsy	1	1
Chest intubation	2	2
Bronchoscopy	2	2
Lung function test	2	2
NEUROLOGY		
CAT Scan head	1,2,3	4
Magnetic resonance Imaging (MRI) brain/spine	2	2
Electroencephalography (EEG)	2	2
Electromyography/ Nerve conduction studies (EMG/NCS)	1	2
GASTROENTEROLOGY		
Endotracheal Intubation	4	6
Peritoneal Aspiration	4	4
Liver Biopsy	3,4	2
Upper GI Endoscopy	2,3	2
Colonoscopy / Sigmoidoscopy	2	2
Variceal banding / Scerlototherapy	1	2
ONCOLOGY		
Chemotherapy	1,2	4
Radiotherapy	1	2
ENDOCRINOLOGY		
Thyroid scan and Radi-iodine treatment	1	2
NEPHROLOGY		
Haemodialysis	2,3	6
Renal Biopsy	1	2

Insertion of double lumen catheter	3,4	4
Peritoneal Dialysis	2	2
PSYCHIATRY		
Psychotherapy sessions	1	2
Electro Convulsive therapy (ECT)	1	2

PROCEDURE	3 Months		6 Months		Third year		12 Months		Total Cases in year	
	Level	Cases	Level	Cases	9 Month	Level	Cases	Level		Cases
	Cases to be incorporated as and when available with the consent of respected supervisor.									
Endotracheal intubation	4	2	4	2	4	2	4	2	8	
Tracheostomy	4	2	4	2	4	2	4	2	8	
Endotracheal intubation	4	1	4	1	4	1	4	1	4	
Endotracheal catheterization	4	2	4	2	-	1	4	1	6	
Recording and reporting ECG	4	2	4	2	4	1	4	1	6	
Endotracheal intubation	4	2	4	2	4	2	4	2	8	
Insertion of CVP lines	3	1	3	1	-	-	-	-	2	
Endotracheal intubation	4	1	4	1	4	1	4	1	4	
Endotracheal intubation	4	1	4	1	4	1	4	1	4	
Endotracheal intubation	3	1	3	1	-	-	-	-	2	
Endotracheal intubation	3	1	3	1	-	-	-	-	2	
Endotracheal intubation	2	1	2	1	-	-	-	-	2	
Endotracheal intubation	3	1	-	-	-	-	-	-	2	
Endotracheal intubation	2	1	-	-	-	-	-	-	1	
Endotracheal intubation	-	-	-	-	2	2	-	-	1	
Endotracheal intubation	2	2	-	-	2	2	-	-	2	
Endotracheal intubation	2	1	2	1	-	-	-	-	4	
Endotracheal intubation	2	1	2	1	2	1	2	1	4	
Endotracheal intubation	2	1	-	-	-	-	-	-	1	
Endotracheal intubation	1	1	1	1	1	1	2	1	4	
Endotracheal intubation	1	1	1	1	1	1	2	1	4	
Endotracheal intubation	1	1	1	1	1	1	2	1	4	
Endotracheal intubation	1	1	1	1	1	1	2	1	4	
Endotracheal intubation	1	1	-	-	-	-	-	-	1	
Endotracheal intubation	1	1	-	-	-	-	-	-	1	
Endotracheal intubation	2	1	-	-	-	-	-	-	1	

PROCEDURE

Rotations to be incorporated as and when available with the consent of respected supervisor

	9 Month		Fourth year 12 Months		Total Cases 1 st year
	Level	Cases	Level	Cases	
Pleural aspiration	4	2	4	2	4
Peritoneal aspiration	4	2	4	2	4
Lumbar puncture	4	1	4	1	2
Nasogastric intubation	4	1	4	1	2
Urethral catheterization	4	1	4	1	2
Recording and reporting ECG	4	2	4	2	4
Proctoscopy	4	1	4	1	2
Endotracheal intubation	4	1	4	1	2
Insertion of CVP lines	4	1	4	1	2
Arterial puncture	4	1	4	1	2
Liver biopsy	4	1	4	1	2
Pleural biopsy	4	1	4	1	2
Joint aspiration	3	1	3	1	2
Bone Marrow aspiration	4	1	-	-	1
Renal Biopsy	3	1	-	-	1
Haemodialysis	-	-	-	-	2
Upper GI endoscopy	3	1	3	1	4
Colonoscopy	3	2	3	2	4
Bronchoscopy	2	1	2	1	4
Abdominal ultrasound	2	1	-	-	1
Exercise tolerance test	2	2	2	2	4
Echocardiography	2	2	3	3	4
CT scan head	2	2	2	2	4
Electroencephalography (EEG)	2	2	2	2	4
Electromyography/Nerve conduction studies (EMG/NCS)	-	-	-	-	1
Chest intubation	1	1	-	-	1
	2	1	-	-	1

Minimum Weekly Requirements:

Activity	Weekly Frequency	Duration	Hours	Credit
Lectures	1	1	(X40)=80	5.0
Seminar	1	1	(X40)=40	1.2
Journal Club	1	1	(X40)=40	5
Morning Report	4	4	(X40)=192	2.5
Case Presentation	1	1	(X40)=48	4.0
Unit based Clinical Activities				1.0
Grand Round	1	3	(X40)=72	1.5
Consultant Round	2	4	(X40)=288	6.0
Clinical Conferences	1/mon	1	(X40)=96	2.0
Out Patient Department	2	8	(X40)=288	6.0
Night duties	2	32	(X40)=1152	6.0
Unsupervised Clinical work per week	6	24	(x40) = 1280	
TOTAL		80	3576	34

GENERAL MEDICINE

- Has cleared paper of basic Medical Sciences from LUMHS.
- Four years specified training in Medicine according to the schedule given above.
- Certificate from the supervisor testifying training in the required areas for specified periods.
- Completed and duly attested logbook.
- Certified of approval of thesis.
- Certified of attendance of mandatory workshops.

EXAMINATION SCHEDULE

- The MD theory examination will be held twice a year.
- Examinations will be conducted at LUMHS Jamshoro.
- English shall be the medium of examination for the theory/practical Clinical and viva examinations.
- The university change in the dates and format of the examination.
- A competent authority appointed by the LUMHS has the power to Debar any candidate from any examination if it is satisfied that such a candidate is not a fit person to take the university examination, because of using unfair means in the examination, misconduct or other disciplinary reason.
- Each successful candidates in the MD examination shall be entitled to the award of master degree by university.
- Application along with the prescribed examination fees and required documents must be submitted by the last date notified for this purpose before each examination.
- Details of examination fees shall be notified before each examination.

FORMAT OF EXAMINATIONS

The MD INTERNAL MEDICINE Examination comprises:

Basic Medical Sciences Paper MD Part-I (Entry Test)

- Consisting of Anatomy, Physiology, Biochemistry and Pathology.
- FORMAT: MCQ type (One Best Type)

Paper I = Basic medical sciences
 Paper II = Clinical oriented Basic medical sciences questions

MD Part-II Examination comprises:

1. ~~MCQ (One Best Type)~~ Theory Examination.

~~Clinical oriented basic sciences questions~~

This is a written examination consisting of three papers.

Paper-I	100 MCQs
Time:	3 hours
Paper-II	10 short essay questions (SEQs)
Time:	3 hours (allotted for 10 questions)

115 Long essay Question (4) - Time 2 hours

PART-II CLINICAL EXAMINATION

The clinical section comprises two components:

- The clinical examination consisting of the long case and short cases.

FORMAT OF TOACS EXAMINATION

TOACS will comprise of 8-10 stations of 5 minutes each with a change time of one minute for the candidates to move from one station to the other. The stations would have an examiner, a patient or both. Structured clinical tasks will be set at each station. The examiners using a global rating scale will assess the performance of each candidate. On stations where an examiner is present the candidates will have to submit written responses to short answer questions on a response sheet.

There will be two types of stations: **Static and Interactive**

In **static stations** the candidate will be presented with patient's data, a clinical problem or a research study and will be asked to give written response to questions asked.

In **interactive stations** the candidates will have to perform a procedure, for example, taking history, performing clinical examination, counseling, assembling an instrument etc. an examiner will be present at each interactive station and will either observe the performing of the candidate or ask questions testing reasoning and problem solving skills.

FORMAT OF LONG CASE EXAMINATION.

Each candidate will be allotted one long case and allowed 40 minutes of history taking and clinical examinations. Candidates should take a careful history from the patient (or relative) and after a thorough physical examination to identify the problems which the patient presents with. During that period a pair of examiner will observe the candidates. In this section the candidates will be assessed on the following areas.

- * Introduce one self
- * Takes informed consent
- * Listens patiently and is polite with the patient
- * Is able to extract relevant information
- * Uses correct clinical methods systematically (including appropriate exposure and re-draping).
- * Present skillfully
- * Given correct findings
- * Gives logical interpretations of findings and discusses differential diagnosis.
- * Enumerates and justifies relevant investigations.
- * Outline and justifies treatment plan, including rehabilitations.
- * Discusses prevention and prognosis

has knowledge of recent advance relevant to the case.

FORMAT OF SHORT CASE EXAMINATION

Candidates will be examined in at least four short cases for a total of 40 minutes jointly by a pair of examiners. Candidates will be given a specific task to perform on patients, one case at a time. During that part of the examination, the candidate will be assessed in:

- Takes informed consent.
- Uses current clinical methods including appropriate exposure and re-draping
- Examines systematically
- Discussion.
- Gives correct findings.
- Given logical interpretations of findings.
- Justifies diagnosis/differential diagnosis.

NOTE: As the time for this section is short, the answers given by the candidates should be precise, and relevant to the patient under discussion.

NOTE:

Total marks of MD Part-II are 300

Long case 100 marks

Short case 100 marks

CLACS 100 marks

To be successful in the examination the candidates must secure minimum 50% marks

in all these components with aggregate marks should not be less than 60% marks.

SUGGESTED READING LIST:

STANDARD TEXT BOOK OF MEDICINE SUCH AS:

- Davidson's principles and practice of medicine 21st edition
- Kumar and Clark clinical medicine
- Cecil essentials of medicine
- Hutchison's clinical methods
- Melcods clinical examination
- Current Medical Diagnosis & Treatment

REFERENCE BOOKS:

- Harrison's principles of internal medicine
- Cecil's text book of medicine
- Oxford text book of medicine

SUGGESTED MEDICAL JOURNALS:

- J.L.U.M.H.S
- J.A.M.A
- B.M.J
- New England journal of medicine
- The lancet
- World journal of gastroenterology.
- J.C.P.S.P
- J.P.M.A
- P.J.M.S
- W.A.S.J
- J.A.M.C
- The Medicine International

MEDICAL WEBSITE:

- www.medscape.com
- www.emedicine.com