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Program
MD General Medicine

(Revised with effect from 2015-2016 onwards)

Contents

Program Outcomes:

PO1: Ability to apply critical thinking in identification of diseases
PO2: Effective communication and developing rapport with the patients.
PO3: Social interaction and developing acceptance among the patients
PO4: The ability to formulate cost effective and patient friendly treatment plans
PO5: Ethics of medical practise towards patient and colleagues is learnt
PO6: Competency to order judicious investigations for the patients
PO7: Attitude to sustain self directed & life long learning
PO8: Ability to identify social, economic, environmental, biological determinants of an adult and institute diagnostic, therapeutic, rehabilitative, preventive and promotive measures to provide holistic care.

Program Specific Outcome:

PSO1: Competency to collect detailed history, perform full physical examination and make proper clinical diagnosis. Perform relevant investigative and therapeutic procedures for the care of the patients interpret important imaging and laboratory results.
PSO2: Competency to diagnose illness based on the analysis of history, physical examination and confirm on further investigative work up. Plan and deliver comprehensive treatment using the principles of rational drug therapy.
PSO3: Competency to manage emergencies efficiently by providing BLS and ALS in emergency situations.
PSO4: Abilitty to document case details including epidemiological data.
PSO5: Ability to recognize conditions that may be outside the area of the specialty / competence and to refer them to an appropriate specialist.
PSO6: Respect patient's rights and privileges including patients right to information and right to seek a second opinion. Demonstrate empathy and humane approach towards patients and their families and respect their sensibilities.
PSO7: Communication skills in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities.
PSO8: Competence in basic concept of research methodology and epidemiology.
PSO9: Ability to facilitate learning of medical / nursing students, practicing physicians, paramedical health workers and other providers as a teacher – trainer.

GOAL

The goal of post graduate course M D General Medicine is to train a MBBS Graduate in to a competent, caring and astute physician who:

- Has acquired the competencies pertaining to medicine that are required to be practiced in the community, backed by scientific knowledge and skill base. Has acquired the skills to effectively communicate with the patient, family and the community.

- Is aware of the contemporary advances and developments in medical sciences related to medicine and evidences keen interest in continuing medical education.
- Is oriented to principles of research methodology.
- Recognize the health needs of the population and carries out professional obligations in keeping with the principles of national health policy and professional ethics and
- Be a motivated 'teacher'- defined as a doctor keen to share his knowledge & Skills with his medical & paramedical professionals.

OBJECTIVES

The following objectives are laid out to fulfill the goals of the course. These are to be achieved by the time the candidate complete the course.
At the end of the training period the candidate must be able to :

- Practice the specialty of the med maintaining high professional standards.Identify social, economic, environmental, biological determinants of an adult and institute diagnostic, therapeutic, rehabilitative, preventive and promotive measures to provide holistic care.

- Collect detailed history, perform full physical examination and make proper clinical diagnosis. Perform relevant investigative and therapeutic procedures for the care of the patients interpret important imaging and laboratory results.

- Diagnose illness based on the analysis of history, physical examination and confirm on further investigative work up. Plan and deliver comprehensive treatment using the principles of rational drug therapy.

- Manage emergencies efficiently by providing BLS and ALS in emergency situations.
- Demonstrate skills in documentation of case details including epidemiological data.

- Knowledge of basic sciences relevant to medicine appropriately.

- Recognize conditions that may be outside the area of the specialty / competence and to refer them to an appropriate specialist.

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- Respect patient's rights and privileges including patients right to information and right to seek a second opinion. Demonstrate empathy and humane approach towards patients and their families and respect their sensibilities. Demonstrate communication skills in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities.

- Develop skills of a self-directed learner, recognize continuing medical educational needs, use appropriate learning recourses, and critically analyses relevant published literature in order to practice evidence-based medicine.

- Demonstrate competence in basic concept of research methodology and epidemiology.

- Facilitate learning medical / nursing students, practicing physicians, paramedical health workers and other providers as a teacher – trainer.

- Under take audit, use of information technology tools and carryout research - - both basic and clinical. With the aim of publishing the work and presenting the work at various scientific forum.

- Professional honesty and integrity are to be maintained.

- Be humble and accept the limitation in the knowledge and skill and to seek help from colleagues when needed.

DURATION OF THE COURSE

The course of the study shall be for three years consisting of six terms and each year consisting of two terms.

COURSE CONTENT

Knowledge

1. *BASIC SCIENCES*:

Applied aspects of Anatomy, physiology, Biochemistry, Pathology, Haematology and Microbiology and Pharmacology

2. GENERAL MEDICAL TOPICS

History of medicine

Clinical History and Examination- Collecting history in detail, carryout clinical examination of various systems and diagnose the condition on clinical grounds.

Rationale of diagnostic tests - ordering diagnostic tests with prioritising the needs based on the clinical, hospital and the socio-economic condition of the patient.

Concept of Essential drugs and Rational use of drugs

Communication skill with the patients – Learning effective communication skills including compassionate explanation and giving emotional support to the suffering patient and his family.

Statistics – Descriptive statistics, analytical statistics, qualitative research methodology, research design and critical review of statistical procedures

Principles of evidence based medicine – Understanding journal based literature study the value of textbook, reference book article;the value of review articles; original articles and their assessment. Understanding the value of retrospective, prospective randomized, controlled and blinded studies – the principles including the meaning of various bio-statistical tests applied in these studies.

Medical Ethics & Social responsibilities of physicians.

Use of computers in medicine

3. GENERAL MEDICINE TOPICS

Genetics: Basic principles of genetics, molecular basis of cancer, genetics and genetic engineering, human genome mapping, chromosomal disorders, genetic basis of cancer, genetic and gene therapy.

Immunology- basics in immunology, Auto immune disorders, immuno deficiency diseases, hypersensitivity reactions- anaphylaxis, angeocdema, adverse drug reactions, Complement, HLA system. Transplantation immunology.

Fluid and electrolyte balance/Acid – base metabolism – The body fluid compartments, metabolism of water and electrolytes, factors maintaining homeostasis, diagrosis and management of acidosis and alkalosis & Electrolyte imbalance

Blood transfusion: - Blood grouping, cross matching, component therapy, complication of blood transfusion, blood substitutes,

Shock and multi - organ Failure:- Types of shock, diagnosis, resuscitation pharmacological support, ARDS, ventilator support and its prevention.

Nutrition:- RDA of nutritional substances, nutritional assessment, nutritional recall, metabolic response to stress, malnutrition, PCM, nutritional deficiency states, nutritional response in stress, enteral and parental nutrition, dietary advice in obesity, DM renal , hepatic failure, hyperlipidaemia, IHD.

Poisoning:- OP compound, sedatives, alcohol, corrosives, anti-convulsants, general principles of management and specific management of poisons including snakes bites, scorpion stings.

Toxicology – Heavy metal poisoning, Flurosis, Lathyrism
Pre anesthetic and postoperative medical problems
Geriatric medicines
Pregnancy medicine
Adolescent medicine

4 INFECTIOUS DISEASES

Basic considerations: Host – parasite interaction, Immunization principles, Lab. Diagnosis of infectious diseases, vaccination (BCG, Typhoid, Tetanus, Hepatitis A & B), Antimicrobial agents, Mol. Mechanism of microbial pathogenesis. Clinical syndromes, (community setting): - Septic shock, Infective endocarditis, PUO, infectious diarrhoea, Bacterial food poisoning, Common STD syndromes, inf. Complications of bites and stings, infections of skin, muscle, and soft tissue, Osteomyelitis, Infra-abdominal infections and abscess, P.I.D Nosocomial Infections: Hospital acquired infection, infections in Transplantpts, Infection control in hospital.

Bacterial infections: Pneumococcal, staphylococcal, streptococcal& Enterococcal, Tetanus, Diphtheri, Anthrax, Listeria, Gas gangrene, Botulism, other clostridial infections.

Meningococcal, H.pylori, salmonella, shigella, cholera, legionella, moraxella Brucella, Pseudomonas, Mixed anaerobic infections, H. influenza, Gonococcal, Pertussis, Plague, Campylobacter, Donovanosis, Actinomucosis.

Anaerobic infections

Mycobacterial diseases: Tuberculosis,Leprosy, Non-tubercular mycobacterium,
Spirochaetal: Syphilis, Leptospirosis, Endemic trepanomatosis.
Rickettisiae: R M spotted fevers
Mycoplasma: M. pneumoniac
Chlamydia : psittacosis

Fungal Infections: Candidiasis, Pcarinii, Aspergillosis, Mucor mycosis Coccidiodomycosis, Cryptococcosis, Hostoplasmosis.
Viral Infections: Anti viral chemotherapy

DNA viruses: Herpes simplex, CMV, Chicken pox vaccinia, other poxviruses. Varicella zoster, parvovirus

Ebstein Barr, HPV
DNA & RNA respiratory viruses: Influenza

RNA viruses: Rabies, ARBO viruses (Dengue, KFD, Japanese encephalitis), Human retrovirus, Entero mumps, Rubella.

HIV & AIDS: - Epidemiology, clinical stages, complications, opportunistic infections (OI), laboratory investigations, HAART, PEP & counseling.

Protozoal and Helminthic infections: - Life history, clinical manifestations, lab diagnosis and therapy, Amoebiasis, Malaria, Giardiasis, Taeniasis, Echinococcosis, Evermicularis, T. trichiura, Ascariasis, Hookworm infections, Filariasis, leishmaniasis, other free living amoebaToxoplasmosis, Trichinella, Trypanosomiasis, Trichomoniasis, H.nana, D latum, Schistosomiasis, Larva Migrans syndrome.

5. CARDIO VASCULAR DISEASES

Rheumatic fever and heart diseases Mycobacterial diseases: Tuberculosis,Leprosy, Non-tubercular
Congenital heart diseases
Atherosclerosis, coronary artery disease
Primary and secondary hypertension
Cardiac Failure
Cardiac arrhythmias – tachy and brady arrhythmias, heart blocks
Infective endocarditis
Myocardial and Pericardial diseases
Pregnancy and heart diseases
Diseases of aorta
DVT and pulmonary embolism
Peripheral arterial and venous diseases
Acute and Chronic cor pulmonale
Disease of Lymphatic system
Non-cardiac surgery in cardiac patients- assessment of anaesthesia and surgery
Cardiac drug and drug interaction
Guidelines published by standard cardiology journals.

Apart from pathophysiology, clinical features and management, the importance of primary and secondary prevention must be stressed.

Clinical cardiology

* Adequate exposure to cardiac OPD work, cardiology ward work and coronary care unit.
* One month in cardiac OPD/Ward, and one month in CCU
* During the posting, the student should accompany his cases for stress – ECG (TMT), echocardiography and cath lab.

6. RESPIRATORY MEDICINE:

Applied aspects of Respiratory system & Respiratory Physiology.

Mycobacteriology: Diagnostic methods, pathogenesis of Mycobacterial diseases their clinical manifestations. Pulmonary and extra pulmonary as well as disseminated Tuberculosis, its pathogenesis, clinical features diagnosis and management, National programme on Tuberculosis including DOTS.

Non Tuberculosis Respiratory infection:

Community and hospital acquired pneumonias, infections of tracheo-bronch tree including cystic, fibrosis, parasitic and fungal diseases of lungs, HIV infections and lungs.

Allergic diseases of respiratory system including bronchial asthma.
Industrial, occupational lung diseases including Interstitial Pulmonary Fibrosis
Suppurative lung diseases
Granulomatous diseases of lung including sarcoidosis.
Pulmonary manifestations of systemic diseases and drug induced lung diseases.
Tropical pulmonary cosiophilia
Diseases of pleura, mediastinum and diaphragm.
Intra- thoracic malignancies including etiology, diagnosis, staging and management of lung cancer.
Sarcoidosis

7. NERVOUS SYSTEM

Applied aspects of anatomy – Brain and spinal cord
Evaluation of CNS diseases
Clinical approach to:- Coma, head ache, seizure, Dementia, Aphasia, sleep disorders
Brain death
Cerebrovascular diseases
Cranial nerve disorders
CNS infection, Bacterial Viral, Fungal, Neurotuberculosis, parasitic
Motor system diseases
Tumors of brain and Spinal cord Extra pyramidal disorders Cerebellar disorders
Demyelinating diseases
Neuro-degenerative disorders Nutritional

Peripheral Neutrites, polyneutrites & Guillain Barre Syndrome
Cervical spondylosis
Disorders of muscle-Dystrophy, Myopathic syndrome

8. GASTRO INTESTINAL & HEPATOBILIARY SYSTEM

Diseases of Oesophagus
Peptic ulcer diseases and its management

Upper gastrointestinal bleed
Lower gastrointestinal bleed
Approach to Mal-absorption and mal-digestion
Inflammatory bowel diseases
Irritable bowel syndrome (I.B.S). Gastrointestinal motility disorders
Chronic Diarrhoea Disorders of peritoneum G I function tests

LIVER

Bilirubin metabolism
Cirrhosis of liver, Biliary Cirrhosis & N.C.P.F & Budd Chiari syndrome
Acute & Chronic Hepatitis –Viral, Toxic
Alcoholic liver disease
Amoebic Liver abscess Obstructive jaundice
Acute & Chronic Hepatic insufficiency
Congenital Hyperbilirubinemias
Tumors of the liver
Drugs and liver
Diseases of gall bladder
Acute and Chronic cholecystitis
Gall Stone
Disease and disorders of Pancreas: - Acute and Chronic Pancreatitis

9. ENDOCRINOLOGY & METABOLISM

Principles of Endocrinology: Mechanism of action of hormones and receptors
Assessment of endocrine function
Hypothalamus & Pituitary: Approach to pituitary diseases, diseases of anterior and posterior- pituitary tumors, Acromegaly, short stature, prolactinoma, diabetes, insipidus, SIADH, Cushing's disease, Panhypopituitarism, Sheehan's syndrome, Non secretary adenoma.
Pancreas: Hypoglycemia, Insulinomia,
Diabetes Mellitus: Prevalence, Etiopathogenesis, ADA criteria for diagnosis; ADA classification, Clinical features, investigations, complications- micro & macro –vascular, management-Diet, Exercise, oral hypoglycemics, Insulin therapy in Type 1 and type 2, Gestational diabetes, Diabetic keto-acidosis, HONK, Hypoglycemia

Thyroid: Iodine metabolism, Iodine deficiency disorder, Synthesis and secretion of thyroid hormone, hypothyroidism, hyper thyroidism, Cretinism, Sick cuthyroid syndrome, thyoiditis, evaluations of nodule, ca. thyroid.

Parathyroid: Primary hyperparathyroidism, hypoparathyroidismTetra Pseudohypoparathyroidism.

Adrenal: Steroid biochemistry, Addison's disease, Cushing's syndrome, Congenial adrenal hyperplasia, Pheochromocytoma, Primary aldosteronism. Gonads:- testes . Men – Hypogonadism – PGAS, Hypogonadotropic (Kallman's Syndrome) Hypergonadotropic (klinefelter's syndrome), delayed puberty, puberty precocious, puberty infertility.

Ovary: delayed puberty – Turner's syndrome, polycystic ovarian diseases, hiruitism, precocious puberty, approach to amenorrhea, postmenopausal syndrome, current concepts in management.

10. SEXUAL MEDICINE:

Applied aspect of anatomy and physiology of reproductive system- male and female. Human sexual response.

Etiology: Clinical features and management of common sexual problems – male and female.

Effect of psychiatric illness and systemic diseases including commonly used drugs on reproductive system.

Infertility – male & female- etiology, clinical features, investigations and physicians role in management.

11. METABOLIC BONE DISORDER (MBD)

Bone mineral, metabolism, osteoporosis
Osteomalacia & rickets
Carcinoid tumors, hyperlipidemia

12. NEPHROLOGY

Evaluation of patient with renal diseases
Interpretation of laboratory tests
Acute renal failure
Pathogenesis, pathology, clinical features
Conservative management
Diet in renal failure
Acute glomerulonephritis including idiopathic GN Nephrotic syndrome
Urinary tract infection
Drugs and kidney
Nephrolithiasis and obstructive disorder Renal involvement in systemic diseases Diabetic nephropathy
Pregnancy and kidney
Basics of renal transplantation
Organ donation
Concept of brain death and cadaveric transplantation

Electrolyte disturbance and its management
Immuno - suppressive drugs
Slow continuous renal replacement therapy

13. HAEMATOLOGY

Haematopoiesis
Anaemias- causes, clinical features and laboratory approach and treatment
Iron deficiency, magaloblastic, haemolytic and aplastic anaemias.
Various thalasemic syndromes, Hb electrophoresis, Polycythaemias
Problem of iron overload
Autoimmune blood disorders
Transfusion medicine
Recognition and management of transfusion disorders
Transfusion in patients with Haematological diseases (Component therapy) Coagualopathy
Hyper coagulable state
Leukaemias an its managements
Myelodysplastic syndromes and mycloproliferative disorders
Platelets disorders- Purpuras- Primary and secondary. Theraputic plasmapheresis and cytapharesis,
ABVP, CHOP Chemotherapy

14. RHEUMATOLOGY AND CONNECTIVE TISSUE DISORDERS

Structure of connective tissue- collegen, clastin and protcoglycans
Immunological mechanism and Immunogen in
Rheumatoid arthritis
SLE
Osteo arthritis
Vasculitis
Sero negative spondyloarthropathy
Crystal arthritis
Inflammatory/metabolic myopathics Arthropathics associated with Endocrine diseases
Haematologic diseases malignant diseases Fibromyalgic syndromes
Lower back pain
Systemic selerosis
Myositis
Mixed connective Tissue disorder (MCID)

15. EMERGENCY MEDICINE

Basic and advanced life support
Shock Syndromes
Anaphylaxis
Acid base imbalance

Multi organ failure
Poisoning – OP compound, sedatives
Basics of mechanical ventilation
Transfusion reaction
Upper G I hemorrhage Upper
Airway obstruction tension
Pneumothorax Acute Asthma
ARDS cardiac arrest
Cardiac temponade
Hypertensive emergencies & urgencies
Status epilepticus
Coma in Diabetes Endocrinal
Emergencies Cerebral
Malaria emergencies in
Cancer infections in ICU
Antibiotic usage in ICU
Enternal & Parenternal Nutrition
Brain death
List of Skills
Cardio pulmonary resuscitation/ Cardio – version / defibrillation
Emergent airway intubations
Central venous cannulation
Arterial cannulation
Mechanical Ventilation
Temporary transvenous pacemaker
Percutaneous tracheostomy
Pericardiocentesis
Therapeutic bronchoscopy, Tube thoracotomy

16. MEDICAL ONCOLOGY

Basics of oncology
Normal cell, Cancer cell- Cell cycle and its Regulation
Molecular Biology Techniques such as Southern blot, Northern blot, western blot, Karyotyping, FISH, PCR
Metastatic cascade
Angeogenesis
Basic principles of Chemotherapy-
Drug classification
Drug action side effects
Radiotherapy
Structure of Atom, radio activity and its effect on cell, side effects
Clinical oncology
Hematological cancers
Hematopoesis
Leukemias and Lymphomas-Classification, Diagnosis, management

Solid tumors- Br. Carcinoma. Hepatomas. MM-Principles of management
Blood component therapy
Bone marrow transplant
Newer Modalities in Therapy and Supportive care
Biologic Response Modifiers
Gene therapy
Stem cell transplant
Newer antibiotics
Nutritional support
Growth factors

17. RADIO DIAGNOSIS

I. **General**:- The importance and scope of different radiological examinations in the diagnosis, treatment and management of various diseases.

II. Newer imaging modalities: Different imaging modalities including the newer imaging techniques – ultrasonography, colour Doppler imaging, colour flow mapping, computed Tomography, MRI, Nuclear imaging, PET and SPECT- basic principles

III. Protocols to be followed while referring for various routine investigations
- Barium studies
- Ultrasonography
- Computed tomography
- MRI imaging
- Nuclear medicines investigations

IV. Various contrast investigations and contrast materials used in imaging techniques and adverse reactions

V. Interpretations of plain, contrast x rays, ultrasonography, CT, MRI& NM

18. PSYCHIATRY

Objectives
Students are required to identify and understand:

Delirium and dementia : Common causes Delirium and dementia Objectives

Students are required to identify and understand :

Delirium and dementia	:	Commoncauses Principles of management of each syndrome
Misuse and dependence on	:	Diverse presentations alcohol and drugs Complications
	:	Outcomes of the conditions
	:	Principles of prevention and treatment
Schizophrenia and related (Included acute and chronic and delusional disorders)	:	Recognition of disorders disorders Treatment of an acute episode Principles of long term management
Depressive and manic disorders	:	Recognition of mania and depressive sorders of all degree of severity
	:	Co- morbidility of depressive and other disorders
	:	Treatment of uncompleted cases
Acute reactions to stress, PTSD and adjustment disorders (including reactions to terminal illness and normal and abnormal grief)	:	Recognition of these conditions Management of uncompleted cases
Anxiety , phobic and obsessional	:	Recognition of disorders disorders
	:	treatment of uncomplicated anxiety and obsessional disorders
Somatoform disorders	:	How physical symptoms arise without physical pathology
	:	Concepts of conversion disorders
	:	hypochondriasis
	:	Somatoform disorders
	:	Principles of management
Disorders of eating , sleeping	:	Clinical presentations psychosexual functions
	:	Principles of management of uncomplicated cases
Personality disorders	:	Concepts of personality and personality disorders
	:	Influence on physical and mental illness
Mental retardation	:	principles of prevention
	:	Recognition of the most common syndromes
	:	Principles of management
Childhood psychiatric disorders	:	Common psychiatric disorders of childhood and adolescence
	:	Principles of management
Old age psychiatric disorders	:	Impact of aging on health and psychiatric illness
	:	Recognition and principles of management of psychiatric disorders in the elderly

Suicide	:	Assessment of risk
	:	Management of potentially suicidal patients and of those recovering from self-harm
Other syndromes	:	Dangerousness and the management of potentially violent people
	:	Physical abuse of children and adults
Mental health act		

19. DERMATOLOGY / STD

The skin manifestation of various diseases
Leprosy
STD
FIV
Systemic infections and infestations
Internal Malignancy
Drug reactions
Systemic diseases with skin manifestations
Psoriasis
Vitiligo
Fungal infections
Lichen planus
Viral, bacterial infections Cutaneous metastasis Panniculitis

20 OCCUPATIONAL DISEASES

Note: The list of topics given is general guidelines. They are neither comprehensive nor all inclusive

SKILLS TO BE ACQUIRED

List of essential competencies

Clinical Assessment skills. Laboratory diagnostic abilities. Interpretation abilities Communication Abilities, and Therapeutic skills.

Skills of history taking

Active and positive listening Empathy.
Non - verbal communication.

Art of history taking in handicapped individuals like deaf, elderly, aphasics Ascertaining life history and life style.
Tactful elicitation of personal and confidential History.
Carry out meticulous general & systemic examination. Specific areas of examination based on clues in the history. Make a personality assessment.

Information, evaluation skills, (interpretation).

Diagnostic formulation and differential diagnosis.
Evaluate, role of personal and social factors contributing to the patients behavior pattern.
Formulate plan of management which includes referral to a specialist, whenever appropriate.

Information - giving skills

Pass information to promote health.
Explain the implication of diagnosis to patient as well as the family. Inform the patient about beneficial aspects and also potential adverse effects of treatment.
Philosophical approach to life and death.

Reporting skills

Report verbally or in writing or any other media of communication
To medical colleagues. To lay people.
To Non- medical agencies involved in patient care. Promote public education.
Promote skills in case reporting and publication of data.

Treatment skills

Promote compliance with prescribed treatment.
Basic prescribing skills for medical disorders commonly encountered (rational drug prescribing skills.)

Recognize earliest adverse effects of treatment and distinguish them from those of symptoms of illness.

Learning skills

Sustained self directed independent learning. Keeping abreast with advances in medical practice. Internalising the concept of life long learning.

Access to computer usage, including internet browsing.

Critical appraisal of latest and best information and data analysis. Skills of using library facilities (including electronic media)

Team work skills

Co- operative with Medical colleagues, Non medical health care workers, Patient and his family organizations, Community services.

Non Governmental Organisations & General Public. List of clinical, procedural and practical skills

Competency list

Note: Figures shown against the items indicate minimum number.
Key PI=Performs independently, PA= Performs under assistance

Description of competencies	Number
Clinical Assessment Skills (AII PI)	
Elicit a detailed clinical history including Dietary recall, calorie and protein estimation	50
Perform a through physical examination including Anthropometry	10
Optic fundi examination	20
Per rectal examination	05
Procedural skills (AII PI)	
Test dose	05
Sampling for fluid cultures	10
IV – Infusions	20
Intravenous cannulation	10
Venesection	05

Description of competencies	Number
ECG recording	50
Pleural tap	10
Peritoneal tap	10
Pericardio - centesis	05
Lumbar puncture	15
Resuscitation	
BLS	30
ALS	10
Centarl line, CVP	05
Blood and blood component (platelet, FFP, etc.) transfusions	10
Arterial puncture for ABG	20
Liver biopsy	10
Liver abscess aspiration	05

Bone marrow aspiration and biopsy	10
Peritoneal/ Pleural	2 each
Glucometer usage	30
Urine analysis	20
Urinary Catheterization	15
R yle's, Stomach tube use	20
Sputum – Gram's / AFB staining	10 each
Respiratory management (AII PI)	
Nebulization	30
Inhaler therapy	30
Oxygen delivery	30
List of PA skills:	
Peritoneal dialysis	05
Haemodialysis	05
Description of competencies	**Number**
Critically ill person (AII PI skills)	
Monitoring a sick person	50
Endotracheal intubations	20
CPR	10
Using a defibrillator	10
Pulse oximetry	50
Feeding tube use	10
Intercostal tube placement with underwater seal	10
Sedation	10
Analgesia	20
Venesection	
CUP monitoring	
List of PA skills:	
Assessment of brain death	10
Laboratory – Diagnostic Abilities (AII PI) Urine protein, sugar, microscopy	10
Peripheral blood smear	10
Malarial smear	10
Ziehl Neelsen method smear – sputum, gastric aspirate	10
Gram's stain smear – CSF, pus	10
Stool pH, occult blood , microscopy	10
KOH smear	2
Cell count – CSF, pleural, peritoneal, any serous fluid	20

Inerpretation Skills (AII PI)

Clinical data (history and examination findings), formulating a differential diagnosis in order of priority, using principles of clinical decision – making, plan investigative workup, keeping in mind the cost – effective approach i.e.,problem solving and clinical decision making.

Blood, urine , CSF and fluid investigations – hematology, biochemistry, X-ray chest, abdomen, bone and joints

RCG
Treadmill testing
ABG analysis
CT scan chest and abdomen CT scan head and spme Barium studies IVP, VUR studies Ultrasound abdomen Pulmonary function tests
Immunological investigations
Echocardiographic studies

Interpretation under supervision (PA)

Description of competencies	Number
Hemodynamic monitoring	10
Handling Ventilators	10
Cardiac pacing	05
GI Endoscopy – Upper	20
Lower	05
Bronchoscopy	05
Tracheostomy	05
U/S abdomen	20
U/S guided aspiration	10
ECHO	20
TMT	20
Nuclear isotope scanning	10
MRI scanning of head / chest	10

To be familiar with

Radio frequency ablation
PTCA & Stent
Peripheral & Carotid Doppler
Peripheral Angioplasty
PFT
Nerve Conduction Studies

5 Interpretation Skills

All Haematological & Biochemical investigations
X-ray of chest, abdomen, bones & joints
Barium studies
ECG Echo TMT
Ultra-sound abdoman
Doppler Studies

CT/MRI of head, chest & abdoman
Immunological studies & Polymerase chain reaction
PFT
EEG/ ENMG

6 Nutritional advice in DM

Obesity/ Malnutrition
Cirrhosis of liver
Renal failure
Hypertension / Ischemic Heart Disease Diarrhoea

7 Principles of Rehabilitation in

Strokes & Neuro degenerative disease
Muscular dystrophies
COPD / Suppurative lung disease
IHD
Epilepsy & Others

Demonstrating professionalism ethical behaviour (humane and professional care of patients), Self directed learning

Utilization of information technology, Medline search, Internet access, Computer usage, Identifying key information sources, literature search, information management

Research methodology – interpretation and presentation of scientific data

8 Therapeutic decision – making

Managing multiple problems simultaneously
Assessing risks, benefits and costs of treatment options

Involving patients in decision – making selecting specific drugs with in classes Rational use of drugs

Training Programme:

To attain proficiency in the subject and to practice the post – graduate student has to be trained in an organised and structured manner. Graded responsibility is to be given to the post – graduate student on a progressive scale in an integrated manner in the three year course with the trainee being able to attain his/ her identity as a physician capable of holistic approach to the patient care. Independent self-directed problem based learning Skill acquisition oriented learning. Ambulatory and Emergency care.

I year

- Ability to obtain a clear and thorough history, physical examination and follow notes. Capability to manage routine & on call duties of the wards. Supervising are follow up of investigations. Ability to develop a rational treatment plan. Initiate carry out treatment. Identify emergency problems, seek help from seniors & initiate treatment so as to develop decision making and judgment skills.

- Supervise house – surgeon's work.

- To prepare synopsis for dissertation

II year

- Develop basic knowledge of the specialty subject in the care of the patient.
- Witness/ perform procedures in the specialty.
- Learn the indications and contraindications of the procedures.
- To learn when to refer a case to the sub- specialist.
- To know when to intervene and when not to intervene in a case
- To carry out data collection for the dissertation.

III year

- Able to handle case independently- diagnose and manage the cases in the unit /ward.
- Diagnose and treat cases in emergency & ICU set up.
- Problem identification of referral cases & advice suitably. Supervise I yr post – graduate students
- Teach interns
- Teach undergraduates
- Help junior residents in his responsibilities in all levels and to intervene a appropriate time when the occasions demand.
- In problem cases, to seek help from senior staff members.
- Successfully complete data collection, analysis and writing up and submission of dissertation.

ROTATION POSTINGS

General Guidelines

(a) Where all departments of sub – specialties are available:

Department	Duration of posting	Year of posting
General Medicine	24 months	I/III
Emergency	2 months	II
I.C.U.	1month	II
Cardiology including ICCU	2 months	II
Neurology	1 month	II
Gastroentrology	1 month	II
Respiratory Diseases	1 month	II
Nephrology	1 month	II
Endocrinology	15 days	II
Skin	15 days	II
Psychiatry	15 days	II

(b) Where separate sub- specialties are NOT available:

Minimum 4 months in Emergency and 1 month in ICU. If any sub-specialty is available, the duration of posting in the department shall be as in item 1. The rest of the training will be in the department of Medicine but the specialist shall ensure:

i) Adequate exposure to cases of sub-specialties.

ii) A minimum exposure to the following procedures :

Department	No. of Procedures
Cardiology	5
Gastroenterology	5
Respiratory Medicine	10
Neurology	10
Nephrology- Haemo dialysis and	
Peritonial dialysis	5 each

TMT	5
Holter	5
Upper GI Endoscopy	10
Colonoscopy	3
Sigmoidoscopy	3
Bronchoscopy	2
Pleural biopsy	2
EMG	2
EEG	5
Muscle biopsy	2
Peritoneal dialysis	5
Haemo dialysis	5

iii) In addition, a minimum number of cases of the following sub – specialties must be seen and entered in the log book:

Psychiatry - 10

Dermatology - 10

Endocrinology - 5

Course Outcomes:

Course I: Basic Sciences, Physiology, Fluid & Electrolyte balance, Toxicology and Emergency Medicine (Course: MDGM1)

CO1: Application of basic science knowledge in the practice of general medicine.

CO2: The competency to diagnose and manage electrolyte disturbances.

CO3: Ability to diagnose and manage common poisons.

CO4: Competency to manage common medical emergencies.

GENERAL MEDICINE TOPICS

Genetics: **Basic principles of genetics, molecular basis of cancer, genetics and genetic engineering**, human genome mapping, chromosomal disorders, genetic basis of cancer, genetic and gene therapy.

Immunology- basics in immunology, **Auto immune disorders, immuno deficiency diseases, hypersensitivity reactions**- anaphylaxis, angeocdema, adverse drug reactions, Complement, HLA system. Transplantation immunology.

Fluid and electrolyte balance/Acid – base metabolism – The body fluid compartments, metabolism of water and electrolytes, factors maintaining homeostasis, diagrosis and **management of acidosis and alkalosis & Electrolyte imbalance**

Blood transfusion: - Blood grouping, cross matching, component therapy, complication of blood transfusion, blood substitutes,

Shock and multi - organ Failure:- Types of shock, diagnosis, resuscitation pharmacological support, ARDS, ventilator support and its prevention.

Nutrition:- RDA of nutritional substances, nutritional assessment, nutritional recall, metabolic response to stress, malnutrition, PCM, nutritional deficiency states, nutritional response in stress, enteral and parental nutrition, dietary advice in obesity, DM renal , hepatic failure, hyperlipidaemia, IHD.

Poisoning:- OP compound, sedatives, alcohol, corrosives, anti-convulsants, general **principles of management and specific management of poisons including snakes bites, scorpion stings.**

Toxicology – Heavy metal poisoning, Flurosis, Lathyrism
Pre anesthetic and postoperative medical problems
Geriatric medicines
Pregnancy medicine
Adolescent medicine

Course II: Infections, Tropical Medicine, CVS, GIT and other systems (Course: MDGM2)

CO1: Ability to diagnose and manage common infections and PUO.

CO2: Emergency management of MI.

CO3: Management of lifestyle diseases and diseases affecting organ systems.

GASTRO INTESTINAL & HEPATOBILIARY SYSTEM

Diseases of Oesophagus

Peptic ulcer diseases and its management
Upper gastrointestinal bleed
Lower gastrointestinal bleed
Approach to Mal-absorption and mal-digestion
Inflammatory bowel diseases
Irritable bowel syndrome (I.B.S). Gastrointestinal motility disorders
Chronic Diarrhoea Disorders of peritoneum G I function tests

INFECTIOUS DISEASES

Basic considerations: Host – parasite interaction, Immunization principles, Lab. Diagnosis of infectious diseases, vaccination (BCG, Typhoid, Tetanus, Hepatitis A & B), Antimicrobial agents, Mol. **Mechanism of microbial pathogenesis**. Clinical syndromes, (community setting): - Septic shock, Infective endocarditis, PUO, infectious diarrhoea, Bacterial food poisoning, Common STD syndromes, inf. Complications of bites and stings, infections of skin, muscle, and soft tissue, Osteomyelitis, Infra-abdominal infections and abscess, P.I.D Nosocomial Infections: **Hospital acquired infection, infections in Transplantpts, Infection control in hospital**.

Bacterial infections: Pneumococcal, staphylococcal, streptococcal& Enterococcal, Tetanus, Diphtheri, Anthrax, Listeria, Gas gangrene, Botulism, other clostridial infections.

Meningococcal, H.pylori, salmonella, shigella, cholera, legionella, moraxella Brucella, Pseudomonas, Mixed anaerobic infections, H. influenza, Gonococcal, Pertussis, Plague, Campylobacter, Donovanosis, Actinomucosis.

Anaerobic infections

Mycobacterial diseases: Tuberculosis,Leprosy, Non-tubercular mycobacterium,
Spirochaetal: Syphilis, Leptospirosis, Endemic trepanomatosis.
Rickettisiae: R M spotted fevers
Mycoplasma: M. pneumoniac
Chlamydia : psittacosis

Fungal Infections: Candidiasis, Pcarinii, Aspergillosis, Mucor mycosis Coccidiodomycosis, Cryptococcosis, Hostoplasmosis.
Viral Infections: Anti viral chemotherapy

DNA viruses: Herpes simplex, CMV, Chicken pox vaccinia, other poxviruses. Varicella zoster, parvovirus

Ebstein Barr, HPV
DNA & RNA respiratory viruses: Influenza

RNA viruses: Rabies, ARBO viruses (Dengue, KFD, Japanese encephalitis), Human retrovirus, Entero mumps, Rubella.

HIV & AIDS: - Epidemiology, clinical stages, complications, opportunistic infections (OI), laboratory investigations, HAART, PEP & counseling.

Protozoal and Helminthic infections: - Life history, clinical manifestations, lab diagnosis and therapy, Amoebiasis, Malaria, Giardiasis, Taeniasis, Echinococcosis, Evermicularis, T. trichiura, Ascariasis, Hookworm infections, Filariasis, leishmaniasis, other free living amoebaToxoplasmosis, Trichinella, Trypanosomiasis, Trichomoniasis, H.nana, D latum, Schistosomiasis, Larva Migrans syndrome.

CARDIO VASCULAR DISEASES

Rheumatic fever and heart diseases Mycobacterial diseases: Tuberculosis,Leprosy, Non-tubercular
Congenital heart diseases
Atherosclerosis, coronary artery disease
Primary and secondary hypertension
Cardiac Failure
Cardiac arrhythmias – tachy and brady arrhythmias, heart blocks
Infective endocarditis
Myocardial and Pericardial diseases
Pregnancy and heart diseases
Diseases of aorta
DVT and pulmonary embolism
Peripheral arterial and venous diseases
Acute and Chronic cor pulmonale
Disease of Lymphatic system
Non-cardiac surgery in cardiac patients- assessment of anaesthesia and surgery
Cardiac drug and drug interaction
Guidelines published by standard cardiology journals.

Apart from pathophysiology, clinical features and management, the importance of primary and secondary prevention must be stressed.

Clinical cardiology

* Adequate exposure to cardiac OPD work, cardiology ward work and coronary care unit.
* One month in cardiac OPD/Ward, and one month in CCU
* During the posting, the student should accompany his cases for stress – ECG (TMT), echocardiography and cath lab.

Course III Respiratory Medicine, Central Nervous System & Rheumatology (Course: MDGM3)

CO1: Ability to diagnose and manage ommon causes of respiratory failure (COPD, Bronchial asthma)

CO2: Ability to diagnose and manage meningitis and vasculitis presenting with multi organ affections

CO3: Competency to diagnose and manage polyarthritis.

RESPIRATORY MEDICINE:

Applied aspects of Respiratory system & Respiratory Physiology.

Mycobacteriology: Diagnostic methods, pathogenesis of Mycobacterial diseases their clinical manifestations. Pulmonary and extra pulmonary as well as disseminated Tuberculosis, its pathogenesis, clinical features diagnosis and management, **National programme on Tuberculosis including DOTS.**

Non Tuberculosis Respiratory infection:

Community and hospital acquired pneumonias, infections of tracheo-bronch tree including cystic, fibrosis, parasitic and fungal diseases of lungs, HIV infections and lungs.

Allergic diseases of respiratory system including bronchial asthma.
Industrial, occupational lung diseases including Interstitial Pulmonary Fibrosis
Suppurative lung diseases
Granulomatous diseases of lung including sarcoidosis.
Pulmonary manifestations of systemic diseases and drug induced lung diseases.
Tropical pulmonary cosiophilia
Diseases of pleura, mediastinum and diaphragm.
Intra- thoracic malignancies including etiology, diagnosis, staging and management of lung cancer.
Sarcoidosis

NERVOUS SYSTEM

Applied aspects of anatomy – Brain and spinal cord
Evaluation of CNS diseases
Glasgow coma scale(GCS) and AVPU scale
Clinical approach to:- Coma, head ache, seizure, Dementia, Aphasia, sleep disorders
Brain death
Cerebrovascular diseases
Cranial nerve disorders
CNS infection, Bacterial Viral, Fungal, Neurotuberculosis, parasitic
Prion diseases
Motor system diseases
Tumors of brain and Spinal cord Extra pyramidal disorders Cerebellar disorders
Demyelinating diseases
Neuro-degenerative disorders Nutritional

Autoimmune encephalitis
Peripheral Neutrites, polyneutrites & Guillain Barre Syndrome
Neurologic manifestations of systemic diseases
Cervical spondylosis
Phakomatosis
Disorders of muscle-Dystrophy, Myopathic syndrome

RHEUMATOLOGY AND CONNECTIVE TISSUE DISORDERS

Structure of connective tissue- collegen, clastin and protcoglycans
Immunological mechanism and Immunogen in
Rheumatoid arthritis
SLE
Osteo arthritis
Vasculitis
Sero negative spondyloarthropathy
Crystal arthritis
Inflammatory/metabolic myopathics Arthropathics associated with Endocrine diseases
Haematologic diseases malignant diseases Fibromyalgic syndromes
Lower back pain
Systemic selerosis
Myositis
Mixed connective Tissue disorder (MCID)

Course IV Nephrology, Endocrinology, Hematology, Oncology & Recent Advances in Medicine (Course: MDGM4)

CO1: Competency to manage acute renal failure, especially following infections & sepsis

CO2: Ability to identify the etiology of pancytopenia or anemia

CO3: Diagnose and manage DM and its complications

ENDOCRINOLOGY & METABOLISM

Principles of Endocrinology: Mechanism of action of hormones and receptors
Assessment of endocrine function
Hypothalamus & Pituitary: **Approach to pituitary diseases**, diseases of anterior and posterior- pituitary tumors, Acromegaly, short stature, prolactinoma, diabetes, insipidus, SIADH, Cushing's disease, Panhypopituitarism, Sheehan's syndrome, Non secretary adenoma.
Pancreas: Hypoglycemia, Insulinomia,
Diabetes Mellitus: Prevalence, Etiopathogenesis, ADA criteria for diagnosis; ADA classification, Clinical features, investigations, complications- micro & macro –vascular, management-Diet, Exercise, oral hypoglycemics, **Insulin therapy in Type 1 and type 2, Gestational diabetes, Diabetic keto-acidosis, HONK, Hypoglycemia**
Recombinant insulin

Principle of islet transplantation
Diabetes and pediatric age group

Thyroid: Iodine metabolism, Iodine deficiency disorder, Synthesis and secretion of thyroid hormone, hypothyroidism, hyper thyroidism, Cretinism, Sick cuthyroid syndrome, thyoiditis, evaluations of nodule, ca. thyroid.

Parathyroid: Primary hyperparathyroidism, hypoparathyroidismTetra Pseudohypoparathyroidism.

Adrenal: Steroid biochemistry, Addison's disease, Cushing's syndrome, Congenial adrenal hyperplasia, Pheochromocytoma, Primary aldosteronism. Gonads:- testes . Men – Hypogonadism – PGAS, Hypogonadotropic (Kallman's Syndrome) Hypergonadotropic (klinefelter's syndrome), delayed puberty, puberty precocious, puberty infertility.

Ovary: delayed puberty – Turner's syndrome, polycystic ovarian diseases, hiruitism, precocious puberty, approach to amenorrhea, postmenopausal syndrome, current concepts in management.

SEXUAL MEDICINE:

Applied aspect of anatomy and physiology of reproductive system- male and female. Human sexual response.

Etiology: **Clinical features and management of common sexual problems – male and female.**

Effect of psychiatric illness and systemic diseases including commonly used drugs on reproductive system.

Infertility – male & female- etiology, clinical features, investigations and physicians role in management.

METABOLIC BONE DISORDER (MBD)

Bone mineral, metabolism, osteoporosis
Osteomalacia & rickets
Carcinoid tumors, hyperlipidemia

NEPHROLOGY

Evaluation of patient with renal diseases
Interpretation of laboratory tests
Acute renal failure
Pathogenesis, pathology, clinical features
Conservative management

Diet in renal failure
Acute glomerulonephritis including idiopathic GN Nephrotic syndrome
Urinary tract infection
Drugs and kidney
Nephrolithiasis and obstructive disorder Renal involvement in systemic diseases Diabetic nephropathy
Pregnancy and kidney
Basics of renal transplantation
Organ donation
Concept of brain death and cadaveric transplantation
Electrolyte disturbance and its management
Immuno - suppressive drugs
Slow continuous renal replacement therapy

HAEMATOLOGY

Haematopoiesis
Anaemias- causes, clinical features and laboratory approach and treatment
Iron deficiency, magaloblastic, haemolytic and aplastic anaemias.
Various thalasemic syndromes, Hb electrophoresis, Polycythaemias
Problem of iron overload
Autoimmune blood disorders
Transfusion medicine
Recognition and management of transfusion disorders
Transfusion in patients with Haematological diseases (Component therapy) Coagualopathy
Hyper coagulable state
Leukaemias an its managements
Myelodysplastic syndromes and mycloproliferative disorders
Platelets disorders- Purpuras- Primary and secondary. Theraputic plasmapheresis and cytapharesis,
ABVP, CHOP Chemotherapy

MEDICAL ONCOLOGY

Basics of oncology
Normal cell, Cancer cell- Cell cycle and its Regulation
Molecular Biology Techniques such as Southern blot, Northern blot, western blot, Karyotyping, FISH, PCR
Metastatic cascade
Angeogenesis
Basic principles of Chemotherapy-
Drug classification
Drug action side effects
Radiotherapy
Structure of Atom, radio activity and its effect on cell, side effects

Clinical oncology
Hematological cancers
Hematopoesis
Leukemias and Lymphomas-Classification, Diagnosis, management
Solid tumors- Br. Carcinoma. Hepatomas. MM-Principles of management
Blood component therapy
Bone marrow transplant
Newer Modalities in Therapy and Supportive care
Biologic Response Modifiers
Gene therapy
Stem cell transplant
Newer antibiotics
Nutritional support
Growth factors

Soft Skills – Elective Course

CO1: The ability to plan and execute a research work.

CO2: Aquisition of skills of teaching

CO3: Ability to work as a member of a healthcare team.

CO4: Competency to provide healthcare in emergency situations such as natural calamities.

CO5: Ability to communicate with the patients and caregivers.

Infections diseases, HIV and AIDS, Cardiovascular diseases, Gastro Intestinal and Hepatobiliary system, Diseases and Disorders of Pancreas, Tropical Diseases.

Paper - III Respiratory Medicine, Central Nervous System & Rheumatology:

Paper – IV – Nephrology, Endocrinology and Metabolism, Hematology, Medical Oncology, Psychiatry, Dermatology, STD, Occupational Diseases

Scheme of Examination

M.D. Degree examination in General Medicine shall consist of dissertation, written papers (Theory), Practical / Clinical and Viva voce.

Dissertation: Every candidate shall submit a dissertation as indicated in Chapter I, Sl. NO. 9. Acceptance of dissertation shall be a precondition for the candidate to appear for the final examination.

A. Written Papers (Theory)

There shall be four question papers, each of three hours duration. Each paper shall consist of two long essay questions, each question carrying 20 marks and 6 short essay questions each carrying 10 marks. Total marks for each paper will be 100.

Questions on recent advances may be asked in any or all the papers. Details of distribution of topics for each paper will be as follows*:

Paper: I Basic Sciences

Applied aspects of Anatomy, Physiology, Biochemistry, Pathology, Microbiology, Pharmacology, General Medical Topics, Genetics, Immunology, Fluid & Electrolyte balance, Blood transfusion, Shock and Multiorgan failure, Nutrition, Poisoning, Geriatrics Medicine, Pregnancy Medicine, Adolescent medicine, Toxicology, Pre anaesthetic and post operative medical problems, Emergency Medicine, Radiodiagnosis.

Paper: II

Infections diseases, HIV and AIDS, Cardiovascular diseases, Gastro Intestinal and Hepatobiliary system, Diseases and Disorders of Pancreas, Tropical Diseases.

Paper - III – Respiratory Medicine, Central Nervous system, Rheumatology and Connective Tissue Disorders, Sexual Medicine, Metabolic Bone Disorders

Paper – IV – Nephrology, Endocrinology and Metabolism, Hematology, Medical Oncology, Psychiatry, Dermatology, STD, Occupational Diseases

*The topics assigned to the different papers are generally evaluated under those sections. However a strict division of the subject may not be possible and some overlapping of topics is inevitable. Students should be prepared to answer overlapping topics.

B. Clinical Examination

It should aim at examining skills and competence of candidate for undertaking independent work as a specialist. Each candidate should examine:

One Long Case	= 65 marks (time - 45 minutes)
Three Short Cases	= 45 marks (time – 30 minutes for each case)

C. Viva Voice Examination **Marks 100**

1) viva – voice Examination: (80 marks)

All examiners will conduct viva – voice conjointly on candidates comprehension analytical approach, expression and interpretation of data. It includes all components of course contents. In addition candidates may be also be given case reports, ECGs, charts, gross specimens, Histopathology slides, x- rays, ultrasound, CT scan images, etc., for interpretation. Questions on use of instruments will be asked. It includes discussions on dissertation.

2) Pedagogy Exercise (Teaching skills): (20 marks)

A topic be given to each candidate in advance. He/ she asked to make a presentation on the topic for 8-10 minutes and assessed.

D) Maximum marks

Theory	Practical	Viva	Grand Total
400	200	100	700

RECOMMENDED BOOKS & JOURNALS:

TEXT BOOKS:

1. DAVIDSON'S Principles and practice of MEDICINE: Christopher Haslett, Edwin R. Chilvers, Nicholas A. Boon, Nicki R Colledge; 19th Edition; 2002 CHURCHILL LIVINGSTONE.
2. Kumar and Clark Clinical MEDICINE: Parveen Kumar, Michel Clark; 5th edition; 2002: W.B. SAUNDERS.
3. OXFORD TEXT BOOK OF MEDICINE; D.J. Weatherall, J.G.G. Lendingham, D.A. Warrell; 3rd Edition I, II, III volumes; 1996; OXFORD MEDICAL PUBLICATIONS.
4. Manson's TROPICAL DISEASES; Gordon cook; 20th Edition 1996: Indian Reprint 2001; Saunders / Harcourt India.
5. CECIL TEXT BOOK OF MEDICINE; Lee Goldman, J. Claude Bennett: 21st Edition volume 1 and volume 2; First Indian Print 2001; Harcourt Asia. Saunders.
6. HARRISON'S PRINCIPLES OF INTERNAL MEDICINE; EUGEN BRAUNWALD, ANTHONYS. FAUCI, DENNIS L. KASPER, STEPHEN L HAUSPER, DAN. L. LONGO, J.LARRY JAMESON; 15th Edition; volume 1 and volume 2; 2001; Mc. Graw Hill.
7. Manual of Practical Medicine; R. Alagappan; 2nd Edition; 2002; JAYPEE.
8. API Text Book of MEDICINE; SIDDARTH N. SHAH, M. Paul Anand; 7th Edition; 2003; The Association of Physicians of India.
9. Physical Diagnosis. Rustom Jal Vakil: A Text Book of symptoms and physical signs 10th edition (2004)

REFERENCE: CARDIOLOGY:

1. HURST'S THE HEAR T; VALENTIN FUSTER, R. WAYNE ALEXANDER, ROBERT A. O'ROURKE; 10th edition – 2001, Volume 1 and 2; Mc Graw Hill.
2. PERLOFF THE CLINICAL RECOGNITION OF CONGENITAL HEART DISEASE; JOSEPH K. PERLOFF; 4th Edition; 1994; HARCOURT BRACE'SAUNDERS.
3. CLINICAL ELECTRO CARDIOGRAPHY; A simplified Approach; Aryl L. Gold berger; 6th Edition; 1999; Mosby. Elsevier India.

4. Leo Schamroth: An introduction to Electrocardiography; Colin Schamroth; 7th Editions 1990; Blackwell Science.
5. BRAUNWALD Heart disease; A text book of Cardiovascular Medicine EUGENE BRAUNWALD 6th Edition; 2001; HARCOUR T BRACE ASIA SAUNDERS.
6. MARRIOTT'S Practical Electrocardiography; Galen S. Wagner; 10th Edition; Lippincott Williams and Wilkins.

ENDOCRINOLOGY:

1. Degroot Jameson ENDOCRINOLOGY; Leslie J. De groot, J. Larry Jameson; 4th Edition; 2001; Volume 1, Volume 2 and Volume 3; SAUNDERS.
2. WILLIAMS TEXT BOOK OF ENDOCRINOLOGY; Jean D. Wilson, Daniel W. Faster & Henry M. Kronenberg, P. Reed Larsen; 9th Edition; 1998; Saunders.

GASTROENTROLOGY

1. Sleisenger and Fordtran's Gastrointestinal and Liver Disease; Pathophysiology/ Diagnosis/ Management; Mark Feldman, Bruce F Schorsehmidt, Marvin H. Slusenger; 6th Edition; volume 1 and 2; 1998; SAUNDERS.
2. TEXT BOOK OF GASTROENTROLOGY; TADATAKA YAMADA, DAVID H. ALPERS, LORER LAINE, CHONG OWYANG DON W. POWELL; 3rd Edition 1999; Lipincott Williams and Wilkins.
3. Bockus GASTROENTROLOGY; J. EDWARD BERK; Haubrich, Kalser, Roth, Schaffner; 4th Edition; Volume 1-7; 1985; Saunders.
4. Oxford Text Book of Clinical Hepatology; Neil Mcintyre, Jean – Pierie Benhamou, Johannes Bircher, Mario Rizzetto, Juan Roder; 1991; Volume 1-2; Oxford Medical Publications.
5. Diseases of the Liver and Biliary System; SHEILA SHERLOCK, JAMES DOOLEY; 11th Edition; 2002; Blackwell Science.

HAEMATOLOGY

1. Text book of HAEMATOLOGY: Shirlyn B. Mekenrie; 2nd Edition; 1996: Williams and Wilkins.
2. Wintrobe's clinical haematology: G. Richard Lee, John Foerster, John Lukens, Frixon Paraskevas, John P. Greer, George M. Rodgers; 10th Editions; 1999: Volume 1 and Volume 2; Lippincott, Williams and Wilikins.
3. Haematology; William J. Williams, Ernest Bautler, Allan J. Erdev, Marihall A. Lechtman; 4th Edition; 1991; Mc Graw Hill.
4. WILLIAMS HEMATOLOGY; Ernest Beutler, Marshall A. Lichtman, Barry S. Coller, Thomas J. Kipps, Uri Seligsohn; 6th Edition; 2001: Mc. Graw Hill.

RHEUMATOLOGY:

1. Pathological basis of the Connective Disease; Dugald Lindsay Gardner; 1992; Edward Arnold.
2. OXFORD TEXT BOOK O+ RHEUMATOLOGY: P.J. Maddison, David A. Isenberg, Patricia Wod, David N. Glass; 1993; Volume 1-2; OXFORD MEDICAL PUBLICATIONS.
3. Manual of Rheumatology: P.K. PISPATI, NE, BORGES, M.Y. NADKAR; 2nd Edition.

NEUROLOGY:

1. Brain's disease of the Nervous System: Micheal Donaghy; 11th Edition; 2001 OXFORD.
2. Neurology in clinical Practice; Principles of Diagnosis and Management; Walter G. Bradley, Robert B. Daroff, Gerald M. Fenichel, C. David Marsden; 3rd Edition; 2000, Volume 1 and Volume 2; B/H Butterworth – Heinemann.
3. Principles of Neurology; Raymond D. Adams, Maurice Victor, Allan H. Ropper: 7th Edition; 2002: Mc Graw Hill.
4. Bickerstaff's Neurological Examination clinical practice: John spillane; 6th Edition 1996; Indian Reprint 2002; Blackwell science.
5. DEJONG'S THE NEUROLOGIC EXAMINATION; A.F. Haerer 5th Edition; Lippincott – Raven
6. JOHN PATTEN Neurological Differential Diagnon; John patten; 2nd Edition; 2001; Springer.
7. Merritt's Neurology 10th Edition, Lewis P. Rowland.
8. TEXT BOOK OF NEUROLOGY; Jagjit S. Chopra, G. Arjundas, S. Prabhakar 2001; 1st Edition: B.I. Churchill Livingstone.
9. JOHN PATTEN Neurological differential diagnosis 2nd Edition.
10. Bickerstaff's Neurological examination in clinical practice, 6th Edition (2002)

NEPHROLOGY:

1. OXFORD TEXT BOOK OF CLINICAL NEPHROLOGY; STEWAR CAMERON, ALEX M. DAVISION, JEAN – PIERRE GRINFELD, DAVID KERR, EBERHARD RITZ; 1992; VOLUME 1-3; OXFORD MEDICAL PUBLICATIONS .
2. THE KIDNEY; BRENNER AND RECTOR; 3rd Edition; 1986; Volume 1-2 Saundors.

ONCOLOGY:

1. CANCER Principles and Practice of Oncology; Vincent T. Devita, Jr. Samuel Hellman, Steven A. Rosenberg; 5th Edition; 1997; Lippincott – Raven.
2. OXFORD TEXT BOOK OF ONCOLOGY; Micheal Peckham, Herbert M. Pinelo, Umbuto Veronesi; 1995; Volume 1-2; OXFORD Medical Publications.
3. Clinical Oncology; Martin D. Abelof f, James O. Armitage, Allen S. Lichter, John E. Niederhuber; 1995; Churchill Livingstone.

PULMONOLOGY:

1. CROFTON AND DOUGLAS'S RESPIRATORY DISEASE; Anthony Seaton, Douglas Seaton, A. Gordon Lcithch; 5th Edition; Volume 1-2; 2000; Blackwell Science.
2. TEXT BOOK OF CRITICAL CARE: Shoemaker, Ayres, Grenvik, Holbrook; 4th Edition; Book I & Book II; 2000; Harcourt Asia. Saunders.
3. CORE TEXT BOOK OF RESPIRATORY CARE PRACTICE: THOMAS A. BARNES; 2nd Edition; 1994; Mosby.
4. Clinical procedures in Emergency Medicine: James R. Roberts, Jerris B. Hedges; 2nd Edition; 1991; Saunders.
5. Emergency Medicine; Howell; Attieri, Jogoda, Prescott, Scott, Stair; 1998; Volume 1-2; Saunders.
6. Text Book of Tuberculosis; K.N. Rao; 2nd Edition; 1981; Vikas Publishing House Pvt. Ltd.
7. TUBERCULOSIS: S.K. Sharma. A. Mohan; 1st Edition; 2001; Jaypee.

CLINICAL METHODS:

1. Hutchisons Clinical Methods; Micheal Swash; 21st Edition; 2002; Sounders/
2. MACHLEOD'S Clinical Examination: Joh F. Munro, Jan W. Campbell, 10th Editions: 2000; Churchill Livngstone.
3. CHAMBERLAIN'S Symptoms and Signs in clinical medicine; An Introduction to medical diagnosis: Colin Ogilvie, Christopher C. Evans; 12th Edition; 1997; sounders.
4. Physical Diagnosis; A text book of Symptoms and physical signs; 9th Edition; 2001; Media Promoter and publishing Pvt. Ltd.

INFECTIOUS DISEASES:

1. Tropical Infectives diseases: Principles, Pathogenes & Practice: Richard L. Guerrart, David H. Waller, Peter F. Weller; 1999; Volume 1-2; Churchill Livingstones.
2. HUNTER'S TROPICAL MEDICINE and Emerging Infectious Diseases: G. Thomas Strickland; 8th Electim; 2000; Saunders.

DIABETOLOGY:

1. JOSLINE'S DIABETES MELLITUS: C. Ronald Kahn, Gordon C. Weri; 1994; Reprint 1998; 13th Edition: Waverly.
2. TEXT BOOK OF DIABETES: John Pickup; Gareth Williams; Ist Edition; 1991; Volume 1-2: Black well Scientific Publication.
3. Diabetes Mellites in Developing Countries; J.S. Bajaj; Ist Edition 1984; Re-print.
4. RSSDI Text book of diabetic mellitus 2002, MMS Ahuja, BB Tripathy, Sam GP Moses, H B Chandalia, A K Das, P V Rao, S V Madhu

JOURNALS

1. American Journal of Cardiology
2. Annals of National Academy of Medical Sciences
3. Heart (Formerly British Heart Journal)
4. Indian Journal of Tuberculosis Chest diseases
5. Indian Heart Journal
6. Indian Practitioner
7. Journal of Association of Physicians of Indians
8. New England Journal of Medicine
9. Post Graduate Medicine
10. American Journal of Medicine
11. Medicine Clinics of North America
12. British Medical Journal
13. American Journal of Respiratory Diseases
14. Diabetes care
15. Annals of Neurology
16. Indian Journal of Nephrology
17. Lancet

Chapter IV

Monitoring Learning Progress

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only also helps teachers to evaluate students, but also students to evaluate themselves. The monitoring be done by the staff of the department based on participation of students in various teaching / learning activities.
It may be structured and assessment be done using checklists that assess various aspects. Model Checklists are given in this Chapter which may be copied and used.

The learning out comes to be assessed should included: (i) Personal Attitudes, (ii) Acquisition of knowledge, (iii) Clinical and operative skills, and (iv) Teaching skills.

i) ***Personal Attitudes.*** The essential items are:

- Caring attitudes
- Initiative
- Organisational ability
- Potential to cope with stressful situations and undertake responsibility

- Trust worthiness and reliability
- To understand and communicate intelligibly with patients and others
- To behave in a manner which establishes professional relationships with patients and colleagues
- Ability to work in team
- A critical enquiring approach to the acquisition of knowledge

The methods used mainly consist of observation. It is appreciated that these items require a degree of subjective assessment by the guide, supervisors and peers.

ii) ***Acquisition of Knowledge:*** The methods used comprise of 'Log Book' which records participation in various teaching / learning activities by the students. The number of activities attended and the number in which presentations are made are to be recorded. The log book should periodically be validated by the supervisors. Some of the activities are listed. The list is not complete. Institutions may include additional activities, if so, desired.

Journal Review Meeting (Journal Club): The ability to do literature search, in dept. study, presentation skills, and use of audio – visual aids are to be assessed. The assessment is made by faculty members and peers attending the meeting using a checklist (see Model Checklist – I, Chapter IV)

Seminars / Symposia: The topics should be assigned to the student well in advance to facilitate in depth study. The ability to do literature search, in depth study presentation skills and use of audio visual aids are to be assessed using a checklist (see Model Checklist II, Chapter IV)

Clinico- pathological conferences : This should be a multidisciplinary case study of an interesting case to train the candidate to solve diagnostic and therapeutic problems by using an analytical approach. The presenter(s) are to be assessed using a checklist similar to that used for seminar.

Medical Audit: Periodic morbidity and mortality meeting be held. Attendance and participation in these must be insisted upon. This may not be included in the assessment.

iii) **Clinical Skills**

Day to Day work : Skills in outpatient and ward wok should be assessed periodically. The assessment should include the candidates' sincerity and punctuality, analytical ability and communication skills (see Model Checklist III, Chapter IV)

Clinical Meetings : Candidates should periodically present cases to his peers and faculty members. This should be assessed using a checklist (see Model Checklist IV, Chapter IV)

Clinical and Procedural Skills : The candidate should be given graded responsibility to enable learning by apprenticeship. The performance is assessed by the guide by direct observation. Particulars are recorded by the student log book. (Table No. 3, Chapter IV)

iv) **Teaching Skills**

Candidates should be encouraged to teach undergraduate medical students and paramedical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the undergraduate students. (see Model Checklist V, Chapter IV)

v) **Periodic Tests**

Three tests may conducted, two of them be annual test, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practicals / clinicals and viva voce.

vii) Work diary / Log book- Every candidate shall maintain work diary and record his / her participation in the training programmes conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, if any conducted by the candidate.

viii) *Records:* Records, log books and marks obtained in tests will be maintained by the Head of the Department and will be made available to the University or MCI.

Log Book

The logbook is a record of the important activities of the candidates during his training, Internal assessment should be based on the evaluation of the log book. Collectively, log books are a tool for the evaluation of the training programme of the institution by external agencies. The record includes academic activities as well as the presentations and procedures carried out by the candidate.

Format for the log book for the different activities is given in Tables 1, 2 and 3 of Chapter IV. Copies may be made and used by the institutions.

Procedure for defaulters: Every department should have a committee to review such situations. The defaulting candidate is counseled by the guide and head of the department. In extreme cases of default the department committee may recommend that defaulting candidate be withheld from appearing the examination, if she/ he fails to fulfill the requirements in spite of being given adequate chances to set himself or herself right.

CHAPTER IV (contd.)
Format of Model Check Lists
Check list – 1, MODEL CHECK-LIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS

Name of the student: Name of the faculty / Observer: date:

Sl No.	Items of observation during Presentation	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1	Article chosen was					
2	Extent of understanding of scope & Objectives of the paper of the candidate					
3	Whether cross reference has been consulted					
4	Whether other relevant publications consulted					
5	Ability to respond to questions on the paper / subject					
6	Audio – Visual aids used					
7	Ability to defend the paper					
8	Clarity of presentation					
9	Any other observation					
	Total Score					

CHAPTER IV (contd.)
Format of model check lists
Check list – II MODEL CHECK-LIST FOR EVALUATION OF SEMINAR PRESENTATIONS

Name of the student: Name of the faculty / Observer: date

Sl No.	Items of observation during Presentation	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1	Whether other revelant publications Consulted					
2	Whether cross references Have been consulted					
3	Completeness of the Preparation					
4	C larity of Presentaion					
5	Understanding the subject					
6	Ability to answer the questions					
7	Time Scheduling					
8	Appropriate use of Audio – Visual aids					
9	Over all Performance					
10	**Any other Observation**					
	Total Score					

CHAPTER IV (contd.)
Format of model check lists

Check list –111 , MODEL CHECK-LIST FOR EVALUATION OF CLINICAL WORK IN WARD/OPD

Name of the student: Name of the faculty / Observer: date

Sl No.	Items of observation during Presentation	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1	Regularity of attendence					
2	Punctaulity					
3	Interaction with Colleagues And Supporting staff					
4	Maintainence of case records					
5	Presentation of cases during rounds					
6	Investigations work up					
7	Bedside Manners					
8	Rapport with patients					
9	Counseling Patient's relatives for blood donation or Postmortem and Case follow up.					
10	**Over all quality of clinical work**					
	Total Score					

CHECK LIST – IV

EVALUATION FORM FOR CLINICAL PRESENTATION

Name of the student: Name of the faculty / Observer: date

Sl No.	Items of observation during Presentation	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1	Completeness of history					
2	Whether all relevant points elicited					
3	Clarity of presentation					
4	Logical order					
5	Mention all positive and negative points of importance					
6	Accuracy of general physical examinations					
7	Whether all physical signs elicited correctly					
8	Whether any major signs missed or misinterpreted					
9	Whether it follows logically from history and findings					
10	Investigations required • Complete test • Relevant order • Interpretation of investigations					
11	Ability to react to questioning whether it follows logically from history and findings					
12	Ability to defend diagnosis					
13	Ability to justify differential diagnosis					
14	Others					
	Grand Total					

CHECK LIST – V

MODEL CHECK LIST FOR EVALUATION OF TEACHING SKILL PRACTICE

Name of faculty / Observer:

Sl No.		Strong point	Weak point
1	Communication of the purpose of the talk		
2	Evokes audience interest in the subject		
3	The Introduction		
4	The sequence of ideas		
5	The use of practical examples and /or illustrations		
6	Speaking style (clear, monotonous, etc. specify)		
7	Attempts audience participation		
8	Summary of the main points at the end		
9	Ask questions		
10	Answer questions asked by the audience		
11	Rapport of the speaker with his audience		
12	Effectiveness of the talk		
13	Uses of AV aids appropriately		

CHECK LIST – VI

MODEL CHECK LIST FOR DISERTATION PRESENTATION

Name: **Faculty / Observer:** **Date:**

Sl No.	Items of observation during Presentation	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1	Interest shown in selecting topic					
2	Appropriate review of literature					
3	Discussion with Guide and faculty					
4	Quality of protocol					
5	Preparation of Proforma					
	Total Score					

CHECK LIST – VII

MODEL CHECK LIST FOR DISERTATION PRESENTATION

Name: **Faculty / Observer:** **Date:**

Sl No.	Items of observation during Presentation	Poor 0	Below average 1	Average 2	Good 3	Very good 4
1	Periodic consultation with Guide/ Co-Guide					
2	Regular collection of case material					
3	Depth of analysis/Discussion					
4	Department Presentations findings					
5	Quality of final output					
6	Others					
	Total Score					

LOG BOOK

Table 1: Academic activities attended

Name: **Admission year:**

College:

Date	Type of activity Specify Seminar, Journal club, Presentation, UG teaching	Particulars

LOG BOOK

Table 2: Academic Presentations made by the students

Name: **Admission year:**

College:

Date	Topic	Type of activity Specify Seminar, Journal club, Presentation, UG teaching

LOG BOOK

Table 3: Diagnostic and Operative procedures performed

Name: **Admission year:**

College:

Date	Name	I D No.	Procedure	Category O, A, PA, PI*

Key:

O – Washed up and observed
A – Assisted a more senior surgeon
PA – Performed procedure under the direct supervision of a senior surgeon
PI - Performed independently

Model Overall Assessment sheet

Name of the college:

Academic Year:

Sl No.	Particulars	Name of the student and Mean score									
		A*	**B***	**C***	**D***	**E***	**F***	**G***	**H***	**I***	**J***
1	Journal Review Presentations										
2	Seminars										
3	Clinical work in wards										
4	Clinical presentation										
5	Teaching skill practice										
	Total Score										

Note: Use separate sheet for each year.

Signature of the HOD: **Signature of the Principal:**

The above overall assessment sheet used along with the logbook should form the basis for certifying satisfactory completion of course of study, in addition to the attendance requirement.

KEY:

Mean Score: Is the sum of all the score of checklists 1 to 7.

A,B,…. : Name of the trainees.

CHAPTER V

MEDICAL ETHICS

Sensitisation and practice

Introduction

There is now a shift from the traditional individual patient, doctor relationship, and medical care. With the advances in science and technology and the needs of patient their families and the community, there is an increased concern with the health of society. There is a shift to greater accountability to the society. Doctors and health professionals are confronted with a many ethical problems. It is, therefore necessary to be prepared to deal with these problems. To accomplish the Goal (1) The General Objective, (2) Stated in chapter II, and develop human values, it is urged that ***ethical sensitisation*** be achieved by lectures or discussion on ethical issues, clinical case discussion of cases with an important ethical component and by including ethical aspects in discussion in all case presentations, bedside rounds and academic post graduate programmes.

Course contents20

1. Introduction to *Medical Ethics*
   What is Ethics
   What are values and norms
   Relationship between being ethical and human fulfillment
   How to form a value system in one's personal and professional life
   Heteronomous Ethics and Autonomous Ethics
   Freedom and personal Responsibilities

2. Definition of Medical Ethics
   Difference between medical ethics and bio- ethics
   Major principles of Medical Ethics

Beneficence	=	Fraternity
Justice	=	Equality
Self determination (autonomy)	=	Liberty

3. Perceptive of medical ethics
   The Hippocratic oath, the Declaration of Helsinki, WHO, Declaration of Geneva, International Court of Medical Ethics (1993)
   Medical Council of India Code of Ethics

4. ***Ethics of the Individual***

The patient as a person, The Right to be respected, Truth and Confidentiality
The autonomy of decision, The concept of disease, health and healing
The Right to health
Ethics of Behavior modification
The Physician – Patient relationship
Organ donation

5. ***The Ethics of Human life***

What is human life
Criteria for distinguishing the human and the non – human
Reasons for respecting human life
The beginning of human life
Conception, contraception, Abortion
Prenatal sex- determination
In vitro fertilization (IVF), Artificial Insemination by Husband (AIH)
Artificial Insemination by Donor (AID),
Surrogate motherhood, Semen Intra fallopian Transfer (SIFT)
Gamete Intra fallopian Transfer (GIFT), Zygote Intra fallopian Transfer (ZIFT)
Genetic Engineering

6. *The Family and Society in Medical Ethics*

The ethics of human sexuality
Family Planning perspectives
Prolongation of life
Advanced life directives – The Living Will
Euthanasia
Cancer and Terminal Care

7. **Profession Ethics**

Code of conduct
Contract and confidentiality
Charging of fees, Fee – splitting
Prescription of drugs
Over – investigating the patient
Low – Cost drugs, Vitamins and tonics
Allocation of resources in health cares
Malpractice and Negligence

8. **Research Ethics**

Animal and experimental research / humanness
Human experimentation
Human volunteer research – Informed Consent
Drug trials

9. Ethical workshop of cases
   Gathering all scientific factors
   Gathering all human factors
   Gathering all value factors
   Identifying areas of value – conflict, Setting of priorities
   Working out criteria towards decisions
10. Law and medicine
   - Medical Council Act
   - Consumer Protection Act
   - Statutory Laws
   a) Article 21 of the Constitution – Right to life
   b) 304 IPC (Indian Penal Code)
   c) Drug Act

Recommended Reading

1. Francis C M Medical Ethics. 11 Ed. 2004. Jaypee Brothers, New Delhi, Rs. 150/-
2. Ethical Guidelines for Biomedical Research on Human Subjects, Indian Council of medical Research (ICMR), New Delhi, 2000
3. ICMR Guidelines on Animal Use, 2001, ICMR, New Delhi