PRAVARA INSTITUTE OF MEDICAL SCIENCES
(DEEMED TO BE UNIVERSITY)
Loni, Tal. Rahata, Dist. Ahmednagar 413736
NAAC Re-accrediated with 'A' Grade

SYLLABUS
PG Programme- MD (GENERAL MEDICINE)
(As per MCI Regulations Governing PG Programme 2000 Amended up to May, 2018)

I. PREAMBLE:

The purpose of PG education is to create specialists who would provide high quality health care and advance the cause of science through research & training.

The competency based training programme aims to produce a post-graduate student who after undergoing the required training should be able to deal effectively with the needs of the community and should be competent to handle all problems related to his/her specialty including recent advances. The student should also acquire skill in teaching of medical/para-medical students in the subject that he/she has received his/her training. He She should be aware of his/her limitations. The student is also expected to know the principles of research methodology and modes of accessing literature.

The purpose of this document is to provide teachers and learners illustrative guidelines to achieve defined outcomes through learning and assessment. This document was prepared by various subject-content specialists. The Reconciliation Board of the Academic Committee has attempted to render uniformity without compromise to purpose and content of the document. Compromise in purity of syntax has been made in order to preserve the purpose and content. This has necessitated retention of "domains of learning" under the heading "competencies".

II. SUBJECT SPECIFIC OBJECTIVES

The postgraduate training should enable the student to:

1. Practice efficiently internal medicine specialty, backed by scientific knowledge including basic sciences and skills
2. Diagnose and manage majority of conditions in his specialty (clinically and with the help of relevant investigations
3. Exercise empathy and a caring attitude and maintain professional integrity, honesty and high ethical standards
4. Plan and deliver comprehensive treatment using the principles of rational drug therapy
5. Plan and advise measures for the prevention and rehabilitation of patients belonging to his specialty;
6. Manage emergencies efficiently by providing Basic Life Support (BLS) and Advanced Life Support (ALS) in emergency situations
7. Recognize conditions that may be outside the area of the specialty/ competence and refer them to an appropriate specialist
8. Demonstrate skills in documentation of case details including epidemiological data
9. Play the assigned role in the implementation of National Health Programs

10. Demonstrate competence in basic concepts of research methodology and clinical epidemiology; and preventive aspects of various disease states
11. Be a motivated 'teacher' - defined as one keen to share knowledge and skills with a colleague or a junior or any learner
12. Continue to evince keen interest in continuing education irrespective of whether he/she is in a teaching institution or is practicing and use appropriate learning resources
13. Be well versed with his medico-legal responsibilities
14. Undertake audit, use information technology tools and carry out research - both basic and clinical, with the aim of publishing the work and presenting the work at scientific forums.
15. The student should be able to recognize the mental condition characterized by self absorption and reduced ability to respond to the outside world (e.g. Autism), abnormal functioning in social interaction with or without repetitive behavior and/or poor communications, etc.

The intended outcome of a competency based program is a consultant specialist who can practice medicine at a defined level of competency in different practice settings. i.e. ambulatory (outpatient), inpatient, intensive care and emergency medicine.

No limit can be fixed and no fixed number of topics can be prescribed as course contents. The student is expected to know his subject in depth; however, emphasis should be on the diseases/health problems most prevalent in that area. Knowledge of recent advances and basic sciences as applicable to his/her specialty should get high priority. Competence in skills commensurate with the specialty (actual hands-on training) must be ensured.

III. SUBJECT SPECIFIC COMPETENCIES

A. Cognitive domain

By the end of the course, the student should have acquired knowledge (cognitive domain), professionalism (affective domain) and skills (psychomotor domain) as given below:

Basic Sciences

1. Basics of human anatomy as relevant to clinical practice e.g. surface anatomy of various viscera, neuro-anatomy, important structures/organs location in different anatomical locations in the body; common congenital anomalies.
2. Basic functioning of various organ-system, control of vital functions, patho-physiological alteration in diseased states, interpretation of symptoms and signs in relation to patho-physiology.
3. Common pathological changes in various organs associated with diseases and their correlation with clinical signs; understanding various pathogenic processes and possible therapeutic interventions possible at various levels to reverse or arrest the progress of diseases.
4. Knowledge about various microorganisms, their special characteristics important for their pathogenetic potential or of diagnostic help; important organisms associated with tropical diseases, their growth pattern/life-cycles, levels of therapeutic interventions possible in preventing and/or eradicating the organisms.
5. Knowledge about pharmacokinetics and pharmaco-dynamics of the drugs used for the management of common problems in a normal person and in patients with diseases

kidneys/liver etc. which may need alteration in metabolism/excretion of the drugs; rational use of available drugs.

6. Knowledge about various poisons with specific reference to different geographical and clinical settings, diagnosis and management.
7. Research Methodology and Studies, epidemiology and basic Biostatistics.
8. National Health Programmes.
9. Biochemical basis of various diseases including fluid and electrolyte disorders; Acid base disorders etc.
10. Recent advances in relevant basic science subjects.

Systemic Medicine

1. Preventive and environmental issues, including principles of preventive health care, immunization and occupational, environmental medicine and bio-terrorism.
2. Aging and Geriatric Medicine including Biology, epidemiology and neuro-psychiatric aspects of aging.
3. Clinical Pharmacology - principles of drug therapy, biology of addiction and complementary and alternative medicine.
4. Genetics - overview of the paradigm of genetic contribution to health and disease, principles of Human Genetics, single gene and chromosomal disorders and gene therapy.
5. Immunology - The innate and adaptive immune systems, mechanisms of immune mediated cell injury and transplantation immunology.
6. Cardio-vascular diseases - Approach to the patient with possible cardio-vascular diseases, heart failure, arrhythmias, hypertension, coronary artery disease, valvular heart disease, infective endocarditis, diseases of the myocardium and pericardium and diseases of the aorta and peripheral vascular system.
7. Respiratory system - approach to the patient with respiratory disease, disorders of ventilation, asthma, Congenital Obstructive Pulmonary Disease (COPD), Pneumonia, pulmonary embolism, cystic fibrosis, obstructive sleep apnoea syndrome and diseases of the chest wall, pleura and mediastinum.
8. Nephrology - approach to the patient with renal diseases, acid-base disorders, acute kidney injury, chronic kidney disease, tubulo-interstitial diseases, nephrolithiasis, Diabetes and the kidney, obstructive uropathy and treatment of irreversible renal failure.
9. Gastro-intestinal diseases - approach to the patient with gastrointestinal diseases, gastrointestinal endoscopy, motility disorders, diseases of the oesophagus, acid peptic disease, functional gastrointestinal disorders, diarrhea, irritable bowel syndrome, pancreatitis and diseases of the rectum and anus.
10. Diseases of the liver and gall bladder - approach to the patient with liver disease, acute viral hepatitis, chronic hepatitis, alcoholic and non-alcoholic steatohepatitis, cirrhosis and its sequelae, hepatic failure and liver transplantation and diseases of the gall bladder and bile ducts.
11. Haematologic diseases - haematopoiesis, anaemias, leucopenia and leucocytosis, myelo-proliferative disorders, disorders of haemostasis and haemopoietic stem cell transplantation.
12. Oncology - epidemiology, biology and genetics of cancer, paraneoplastic syndromes and endocrine manifestations of tumours, leukemias and lymphomas, cancers of various organ systems and cancer chemotherapy.

13. Metabolic diseases - inborn errors of metabolism and disorders of metabolism.
14. Nutritional diseases - nutritional assessment, enteral and parenteral nutrition, obesity and eating disorders.
15. Endocrine - principles of endocrinology, diseases of various endocrine organs including diabetes mellitus.

16. Rheumatic diseases - approach to the patient with rheumatic diseases, osteoarthritis, rheumatoid arthritis, spondyloarthropathies, systemic lupus erythematosus (SLE), polymyalgia, rheumatic fibromyalgia and amyloidosis.

17. Infectious diseases - Basic consideration in Infectious Diseases, clinical syndromes, community acquired clinical syndromes. Nosocomial infections, Bacterial diseases - General consideration, diseases caused by gram - positive bacteria, diseases caused by gram - negative bacteria, miscellaneous bacterial infections, Mycobacterial diseases, Spirochetal diseases, Rickettsia, Mycoplasma and Chlamydia, viral diseases, DNA viruses, DNA and RNA respiratory viruses, RNA viruses, fungal infections, protozoal and helminthic infections .

17. Neurology - approach to the patient with neurologic disease, headache, seizure disorders and epilepsy, coma, disorders of sleep, cerebrovascular diseases, Parkinson's disease and other movement disorders, motor neuron disease, meningitis and encephalitis, peripheral neuropathies, muscle diseases, diseases of neuromuscular transmission and autonomic disorders and their management.

18. The mental condition characterized by complete self absorption with reduced ability to communicate with the outside world (Autism), abnormal functioning in social interaction with or without repetitive behaviour and/or poor communication etc.

19. Dermatology - Structure and functions of skin, infections of skin, papulo-squamous and inflammatory skin rashes, photo-dermatology, erythroderma, cutaneous manifestations of systematic diseases, bullous diseases, drug induced rashes, disorders of hair and nails, principles of topical therapy.

B. Affective Domain:

1. Should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient and the clinician or other colleagues to provide the best possible diagnosis or opinion.
2. Always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health personnel and to respect the rights of the patient including the right to information and second opinion.
3. Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers and paramedical staff, and for effective teaching.

C. Psychomotor domain

Clinical Assessment Skills

- Elicit a detailed clinical history
- Perform a thorough physical examination of all the systems

Procedural skills

Test dose administration

- Mantoux test
- Sampling of fluid for culture
- IV- Infusions
- Intravenous injections
- Intravenous canulation
- ECG recording
- Pleural tap
- Lumbar puncture
- Cardiac
  TMT
  Holter Monitoring
  Echocardiogram
  Doppler studies
- Cardio Pulmonary Resuscitation (CPR)
- Central venous line insertion, CVP monitoring
- Blood and blood components matching and transfusions
  Arterial puncture for ABG
- Fine needle aspiration cytology (FNAC) from palpable lumps
- Bone marrow aspiration and biopsy
- Abdominal paracentesis - diagnostic
- Aspiration of liver abscess
- Pericardiocentesis
- Joint fluid aspiration
- Liver biopsy
- Nerve/ muscle/ skin/ kidney/ pleural biopsy
- Ultrasound abdomen, echocardiography
- Upper GI endoscopy, procto-sigmoidoscopy

Respiratory management

- Nebulization
- Inhaler therapy
- Oxygen delivery

Critically ill person

- Monitoring a sick person
- Endotracheal intubation
- CPR
- Using a defibrillator
- Pulse oximetry
- Feeding tube/Ryle's tube, stomach wash
- Naso-gastric intubation
- Urinary catheterization – male and female
- Prognostication
- Haemodialysis

Neurology- interpret

- **Nerve Conduction studies**
- **EEG**
- Evolved Potential interpretation
- Certification of Brain death
- Intercostal tube placement with underwater seal Thoracocentesis
- Sedation
- Analgesia

Laboratory-Diagnostic Abilities

- Urine protein, sugar, microscopy
- Peripheral blood smear
- Malarial smear
- Ziehl Nielson smear-sputum, gastric aspirate
- Gram's stain smear-CSF, pus
- Stool pH, occult blood, microscopy
- KOH smear
- Cell count - CSF, pleural, peritoneal, any serous fluid

Observes the procedure

- Subdural, ventricular tap
- Joint Aspiration – Injection
- ***Endoscopic Retrograde Cholangio- Pancreatography (ERCP)***
- Peritoneal dialysis

Interpretation Skills

Clinical data (history and examination findings), formulating a differential diagnosis in order of priority, using principles of clinical decision making, plan investigative work-up, 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
- ECG
- Treadmill testing
- ABG analysis
- Ultrasonography
- CT scan chest and abdomen
- CT scan head and spine
- MRI
- Barium studies
- IVP, VUR studies
- Pulmonary function tests
- Immunological investigations
- Echocardiographic studies

Interpretation under supervision

Hemodynamic monitoring

- Nuclear isotope scanning
- MRI spectroscopy/SPECT

- Ultrasound guided aspiration and biopsies

Communication skills

- While eliciting clinical history and performing physical examination Communicating health, and disease
- Communicating about a seriously ill or mentally abnormal Communicating death
- Informed consent
- Empathy with patient and family members
- Referral letters, and replies
- Discharge summaries
- Death certificates
- Pre-test counseling for HIV
- Post-test counseling for HIV
- Pedagogy -teaching students, other health functionaries-lectures, bedside clinics, discussions
- Health education - prevention of common medical problems, promoting healthy life-style, immunization, periodic health screening, counseling skills in risk factors for common malignancies, cardiovascular disease, AIDS
- Dietary counseling in health and disease
- Case presentation skills including recording case history/examination, preparing follow-up notes, preparing referral notes, oral presentation of new cases/follow-up cases
- Co-coordinating care - team work (with house staff, nurses, faculty etc.)
- Linking patients with community resources
- Providing referral
- Genetic counseling

Others

- *Demonstrating*
  - professionalism
  - ethical behavior (humane and professional care to patients)
- *Utilization of information technology*
  - Medline search, Internet access, computer usage
- *Research methodology*
  - designing a study
  - interpretation and presentation of scientific data
- *Self-directed learning*
  - identifying key information sources
  - literature searches
  - information management
- *Therapeutic decision-making*
  - managing multiple problems simultaneously
  - assessing risks, benefits and costs of treatment options
  - involving patients in decision-making
  - selecting specific drugs within classes
  - Rational use of drugs

IV. SYLLABUS

Course contents:

Basic Sciences

1. Basics of human anatomy as relevant to clinical practice
    - surface anatomy of various viscera
    - neuro-anatomy
    - important structures/organs location in different anatomical locations in the body
    - common congenital anomalies
2. Basic functioning of various organ-system, control of vital functions, patho-physiological alteration in diseased states, interpretation of symptoms and signs in relation to patho-physiology.
3. Common pathological changes in various organs associated with diseases and their correlation with clinical signs; understanding various pathogenic processes and possible therapeutic interventions possible at various levels to reverse or arrest the progress of diseases.
4. Knowledge about various microorganisms, their special characteristics important for their pathogenetic potential or of diagnostic help; important organisms associated with tropical diseases, their growth pattern/life-cycles, levels of therapeutic interventions possible in preventing and/or eradicating the organisms.
5. Knowledge about pharmacokinetics and pharmaco-dynamics of the drugs used for the management of common problems in a normal person and in patients with diseases kidneys/liver etc. which may need alteration in metabolism/excretion of the drugs; rational use of available drugs.
6. Knowledge about various poisons with specific reference to different geographical and clinical settings, diagnosis and management.
7. Research Methodology and Studies, epidemiology and basic Biostatistics.
8. National Health Programmes.
9. Biochemical basis of various diseases including fluid and electrolyte disorders; Acid base disorders etc.
10. Recent advances in relevant basic science subjects.

Systemic Medicine

1. Preventive and environmental issues, including principles of preventive health care, immunization and occupational, environmental medicine and bio-terrorism.
2. Aging and Geriatric Medicine:
    - Biology
    - Epidemiology
    - neuro-psychiatric aspects of aging
3. Clinical Pharmacology:
    - principles of drug therapy
    - biology of addiction
    - complementary and alternative medicine
4. Genetics:
    - overview of the paradigm of genetic contribution to health and disease
    - principles of Human Genetics
    - single gene and chromosomal disorders

- gene therapy

5. Immunology:
    - innate and adaptive immune systems
    - mechanisms of immune mediated cell injury
    - transplantation immunology
6. Cardio-vascular diseases:
    - Approach to the patient with possible cardio-vascular diseases
    - heart failure
    - arrhythmias
    - hypertension
    - coronary artery disease
    - valvular heart disease
    - infective endocarditis
    - diseases of the myocardium and pericardium
    - diseases of the aorta and peripheral vascular system
7. Respiratory system:
    - approach to the patient with respiratory disease
    - disorders of ventilation
    - asthma
    - Congenital Obstructive Pulmonary Disease (COPD)
    - Pneumonia
    - Pulmonary embolism
    - cystic fibrosis
    - obstructive sleep apnoea syndrome and diseases of the chest wall, pleura and mediastinum
8. Nephrology:
    - approach to the patient with renal diseases
    - acid-base disorders
    - acute kidney injury
    - chronic kidney disease
    - tubulo-interstitial diseases
    - nephrolithiasis
    - Diabetes and the kidney
    - obstructive uropathy and treatment of irreversible renal failure
9. Gastro-intestinal diseases:
    - approach to the patient with gastrointestinal diseases
    - gastrointestinal endoscopy
    - motility disorders
    - diseases of the oesophagus
    - acid peptic disease
    - functional gastrointestinal disorders
    - diarrhea
    - irritable bowel syndrome
    - pancreatitis and diseases of the rectum and anus
10. Diseases of the liver and gall bladder:
    - approach to the patient with liver disease
    - acute viral hepatitis

- chronic hepatitis
- alcoholic and non-alcoholic steatohepatitis
- cirrhosis and its sequelae
- hepatic failure and liver transplantation
- diseases of the gall bladder and bile ducts

11. Haematologic diseases:
    - Haematopoiesis
    - Anaemias
    - leucopenia and leucocytosis
    - myelo-proliferative disorders
    - disorders of haemostasis and haemopoietic stem cell transplantation
12. Oncology:
    - Epidemiology
    - biology and genetics of cancer
    - paraneoplastic syndromes and endocrine manifestations of tumours
    - leukemias and lymphomas
    - cancers of various organ systems and cancer chemotherapy
13. Metabolic diseases - inborn errors of metabolism and disorders of metabolism.
14. Nutritional diseases - nutritional assessment, enteral and parenteral nutrition, obesity and eating disorders.
15. Endocrine - principles of endocrinology, diseases of various endocrine organs including diabetes mellitus.
16. Rheumatic diseases:
    - approach to the patient with rheumatic diseases
    - osteoarthritis
    - rheumatoid arthritis
    - spondyloarthropathies
    - systemic lupus erythematosus (SLE)
    - polymyalgia
    - rheumatic fibromyalgia and amyloidosis
17. Infectious diseases:
    - Basic consideration in Infectious Diseases
    - clinical syndromes
    - community acquired clinical syndromes
    - Nosocomial infections
    - Bacterial diseases - General consideration, diseases caused by gram - positive bacteria, diseases caused by gram - negative bacteria
    - miscellaneous bacterial infections
    - Mycobacterial diseases
    - Spirochetal diseases ○ Rickettsia
    - Mycoplasma and Chlamydia
    - viral diseases'
    - DNA viruses
    - DNA and RNA respiratory viruses
    - RNA viruses
    - fungal infections, protozoal and helminthic infections .

18. Neurology - approach to the patient with neurologic disease, headache, seizure disorders and epilepsy, coma, disorders of sleep, cerebrovascular diseases, Parkinson's disease and other movement disorders, motor neuron disease, meningitis and encephalitis, peripheral neuropathies, muscle diseases, diseases of neuromuscular transmission and autonomic disorders and their management.
19. The mental condition characterized by complete self absorption with reduced ability to communicate with the outside world (Autism), abnormal functioning in social interaction with or without repetitive behaviour and/or poor communication etc.
20. Dermatology:
    - Structure and functions of skin
    - infections of skin
    - papulo-squamous and inflammatory skin rashes
    - photo-dermatology
    - erythroderma
    - cutaneous manifestations of systematic diseases
    - bullous diseases
    - drug induced rashes
    - disorders of hair and nails
    - principles of topical therapy

V. TEACHING AND LEARNING METHODS

Didactic lectures are of least importance; seminars, journal clubs, symposia, reviews, and guest lecturers should get priority for acquiring theoretical knowledge. Bedside teaching, grand rounds, interactive group discussions and clinical demonstrations should be the hallmark of clinical/practical learning. Students should have hands-on training in performing various procedures and ability to interpret results of various tests/investigations. Exposure to newer specialized diagnostic/therapeutic procedures should be given.

Importance should be attached to ward rounds especially in conjunction with emergency admissions. Supervision of work in outpatient department should cover the whole range of work in the unit. It is particularly necessary to attend sub-specialty and symptom specific clinics. The development of independent skills is an important facet of postgraduate training. Joint meetings with physician colleagues, e.g. radiologists and pathologists play a valuable part in training.

The training techniques and approach should be based on principles of adult learning. It should provide opportunities initially for practicing skills in controlled or simulated situations. Repetitions would be necessary to become competent or proficient in a particular skill. The more realistic the learning situation, the more effective will be the learning. Clinical training should include measures for assessing competence in skills being taught and providing feedback on progress towards a satisfactory standard of performance. Time must be available for academic work and audit.

The following is a rough guideline to various teaching/learning activities that may be employed:

- Intradepartmental and interdepartmental conferences related to case discussions.
- Ward rounds along with emergency admissions.

- Attendance at sub-specialty and symptom specific clinics
- external rotation postings in departments like cardiology, neurology and other subspecialties
- Skills training
- Conferences, Seminars, Continuing Medical Education (CME) Programmes.
- Journal Club
- Research Presentation and review of research work.
- A postgraduate student of a postgraduate degree course in broad specialities/super specialities would be required to present one poster presentation, to read one paper at a national/state conference and to present one research paper which should be published/accepted for publication/sent for publication during the period of his postgraduate studies so as to make him eligible to appear at the postgraduate degree examination.
- Participation in workshops, conferences and presentation of papers etc.
- Maintenance of records. **Log books** should be maintained to record the work done which shall be checked and assessed periodically by the faculty members imparting the training.
- Postgraduate students shall be required to participate in the teaching and training programme of undergraduate students and interns.
- Department should encourage e-learning activities.

Illustration of Structured Training

Time Period	Description/Levels	Content	Responsibilities
IstMonth	Orientation	Basic cognitive skills	- Combined duties - Supervised procedures
I year	Beginners	Procedural abilities OPD & ward work	- History sheet writing - Clinical abilities, - Procedural abilities (PA, PI)*, - Laboratory-diagnostic (All PI) - Communication skills O,A,PA - BLS & ACLS
IInd Year	Intermediate	Intermediate degree of cognitive abilities Specialised procedural skills Emergency	- Independent duties - All procedures - Respiratory management abilities (All PI) - Communication skills (PA, PI) - Writing thesis - Teaching UGs
IIIrdyear		Special skills Intensive critical care	- Advanced levels of independent duties, - casualty calls, - ICU, NICU, - UG teaching

- Specialized skills include exchange transfusions, intercostals drainage, peritoneal dialysis, defibrillation/ cardioversion etc.

- Levels of necessary cognitive skills are best illustrated by the following:

Basic: history taking, diagnosis/differential diagnosis, points for and against each diagnosis

Intermediate: detailed discussion on differential diagnoses, analysis and detailed interpretation of clinical and laboratory data;

Advanced: analysis of clinical information and synthesis of reasonable concepts including research ideas.

During the training programme, patient safety is of paramount importance; therefore, skills are to be learnt initially on the models, later to be performed under supervision followed by performing independently; for this purpose, provision of skills laboratories in the medical colleges is mandatory.

VI. ASSESSMENT

FORMATIVE ASSESSMENT, during the training programme

Formative assessment should be continual and should assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self directed learning and ability to practice in the system.

General Principles
Internal Assessment should be frequent, cover all domains of learning and used to provide feedback to improve learning; it should also cover professionalism and communication skills. The Internal Assessment should be conducted in theory and practical/clinical examination.

Quarterly assessment during the MD training should be based on:

1. **Journal based / recent advances learning**
2. **Patient based /Laboratory or Skill based learning**
3. **Self directed learning and teaching**
4. **Departmental and interdepartmental learning activity**
5. **External and Outreach Activities / CMEs**

The student to be assessed periodically as per categories listed in postgraduate student appraisal form (Annexure I).

SUMMATIVE ASSESSMENT, namely, assessment at the end of training

The summative examination would be carried out as per the Rules given in POSTGRADUATE MEDICAL EDUCATION REGULATIONS, 2000.

The Post graduate examination shall be in three parts:

1. Thesis

Every post graduate student shall carry out work on an assigned research project under the guidance of a recognised Post Graduate Teacher, the result of which shall be written up and submitted in the form of a Thesis. Work for writing the Thesis is aimed at contributing to the development of a spirit of enquiry, besides exposing the post graduate student to the techniques of research, critical analysis, acquaintance with the latest advances in medical science and the manner of identifying and consulting available literature.

Thesis shall be submitted at least six months before the Theory and Clinical / Practical examination. The thesis shall be examined by a minimum of three examiners; one internal and two external examiners, who shall not be the examiners for Theory and Clinical examination. A post graduate student shall be allowed to appear for the Theory and Practical/Clinical examination only after the acceptance of the Thesis by the examiners.

2. Theory:

The examinations shall be organised on the basis of 'Grading'or 'Marking system' to evaluate and to certify post graduate student's level of knowledge, skill and competence at the end of the training. Obtaining a minimum of 50% marks in 'Theory' as well as 'Practical' separately shall be mandatory for passing examination as a whole. The examination for M.D./ MS shall be held at the end of 3rd academic year. An academic term shall mean six month's training period.

There will be four theory papers, as below:

Paper I:	Basic Medical Sciences
Paper II:	Medicine and allied specialties including pediatrics, dermatology & psychiatry
Paper III:	Tropical Medicine and Infectious Diseases
Paper IV:	Recent Advances in Medicine

3. Clinical / Practical and Oral/viva voce Examination:

The Distribution of Practical Marks shall be as follows:

1. One Long Case	: 100 Marks
2. Three Short Cases (60 marks each)	: 180 Marks
3. Oral / Viva Vice	: 120 Marks
a. Radiology & Instruments	: 30 marks
b. ECG & Lab reports	: 30 marks
c. Therapeutics & Emergencies	: 30 marks
d. Dissertation & Grand Viva	: 30 marks
Total ----------	**: 400 Marks**
Theory + Practical (Grand Total)	**: 800 Makrs**

VII. MANDATORY COMPLIANCE

1	The Model Weekly Time Table for Teaching learning activities is enclosed as	**:**	**Annexure – I**
2	Mandatory compliance of a PG student in T.L. process and CIA during the three year of study are given in	**:**	**Annexure – II**
3	The units for Quarterly assessment for CIA is given in	**:**	**Annexure – III**
4	Post Graduate student Quarterly Appraisal form for CIA is enclosed as	**:**	**Annexure – IV**
5	Mandatory Requirements to be eligible to appear for the University Summative Evaluation Examination is given in	**:**	**Annexure – V**
6	The Proforma of the Certificate on Attendance, Training Completion, Publication and Presentation Research / Poster / oral submission of Dissertation and present of all theory practical fee to be duly filled in and duly signed by PG Guide HOD, Finance Officer, Dean of faculty an HOI to be submitted to university COE before the issue of Hall Ticket for final exam is given us	**:**	**Annexure – VI**
7	The model QP pattern of paper I/II/III/IV, each of 100 marks and of 3 hours duration is enclosed as	**:**	**Annexure – VII**
8	The model Blue print for setting of Question papers and proper verbs/ phrases to be used in QP setting is given in	**:**	**Annexure – VIII**
9	The model marks list for practical and Vivavoce for PG medical MD/MS/ examination is enclosed as**.**	**:**	**Annexure – IX**

VIII. RECOMMENDED READING

Text Books (latest edition)

- API Text book of Medicine
- Davidson's Principles and Practice of Medicine
- Harrison's Principles & Practice of Medicine
- Oxford Text book of Medicine
- Kumar & Clark : Book of Clinical Medicine
- Cecil : Text Book of Medicine

Reference books

- Hurst : The Heart
- Braunwald - Heart Disease: A Textbook of Cardiovascular Medicine
- Marriot's Practical Electrocardiography
    - Crofton and Douglas : Respiratory Diseases
- Brain's Diseases of the Nervous system
- Adam's Principles of Neurology
- William's Text Book of Endocrinology
- De Gruchi's Clinical Hematology in Medical Practice
- Kelly's Text Book of Rheumatology

- Slesenger&Fordtran : Gastrointestinal and Liver disease
- Manson's Tropical Diseases

Clinical Methods

- Hutchinson's Clinical Methods
- Macleod's Clinical examination
- John Patten : Neurological Differential Diagnosis
- Neurological examination in Clinical Practice by Bickerstaff

Journals

03-05 international Journals and 02 national (all indexed) journals

- J. Association Physicians of India
- Indian of Tuberculosis and Chest Diseases
- Indian Heart Journal
- Neurology India
- Indian J of Gastroentrology
- British Medical Journal
- Postgraduate Medical Journal
- The Lancet
- Journal of American Medical Association
- British Heart Journal
- Medical Clinics of North America
- New England J Medicine
- Annals of Internal Medicine
- Recent Advances in Internal Medicine

Annexure - I

P.G. Teaching Time Table – Model

Clinical postings (OPD – IPD Duties Ward Rounds, Casualty posting, ICU posting, posting to support Departments like Radiology, Anaesthesia CCL , Pathology, FMT, Postings to field work and PHCs Camps and other postings as per provisions of MCI, are mandatory on all week Day as per posting.

Day of the week	Time 03 to 5 PM
Monday	Journal Club
Tuesday	Case presentation / Micro Clinic- Patient based Training
Wednesday	Seminar / GD / Panel Discussion
Thursday	Lecture by Faculty on select Topics
Friday	Clinical Meet / CPC / CME
Saturday	Guest Lecture by Experts / Skill Lab or Simulation Lab
Sunday (Select ones)	Medical Camps / Blood Donation Camp / Other types of Camps

Note

1. The Dept may select suitable days for a particular task assigned. But all of 7 tasks per week are a must
2. All the PG Teachers, PG students must attend these PG TLE Activities.
3. Attendance for these activities shall be maintained at the Department and Institutions. Implementation of the MCI Regulations, Syllabus and Time Table is the responsibility of HOD / HOI.

HOD HOI DEAN OF FACULTY REGISTRAR

Annexure – II

Mandatory Compliance of a PG student in Teaching – Learning Activities As per MCI Regulations Syllabus and Advisory

Sr. No.		Activities to be carried at by a PG student	Number per Ist year (Minimum)	Number Per IInd Year (Minimum)	Number per IIIrd year (Minimum)	Total Number (Minimum) For 3 years
1		Presentation of Journal Articles in Journal club	12	12	6	30
2	a	Case Presentation / Clinic	4	8	8	20
	b	Skill Lab & Simulation	4	4	4	12
3	a	Presentation of Seminars	4	4	4	12
	b	Leading a Group Discussion on a select Topic	4	4	4	12
	c	Assignment submission	4	4	4	12
4	a	Lectures / Tutorials to UG students /panel Discussion	4	4	4	12
	b	Clinical meeting CMC/ CPC	12	12	12	36
	c	BLS	1	--	--	1
	d	ACLS	1	--	--	1
5		Medical Camps Health Checkup at Villages / Schools/ Blood Donation / etc.	6	6	6	18
6	a	Orientation Programme	1	1	1	3
	b	Research Methodology Workshop	1	--	--	1
	C	Presentation of synopsis of the Thesis / Dissertation	1	--	--	1
	d	Presentation of Mid Term work of Thesis / Dissertation	--	1	--	1
	e	Presentation of final Draft of Dissertation / Thesis	--	--	1	1
	f	Presentation of Research Article	--	0 or 1	0 or 1	1
	g	Publication of an Article	--	0 or 1	0 or 1	1 or 2
7		LOG Book	1 (a)	1 (b)	1 (c)	1 a+b+c
8		CIA	4	4	4	12
9		Any other Activity Specified by Dept.				

Note :- 1. The Department may conduct periodic preparatory tests in Theory / Practical/Clinicals and Vivavoce. Quiz and MCQ test may to be adopted

2. The 12th CIA may also include a preparation examination on the model of university examination as a training cum assessment

HOD HOI DEAN OF FACULTY REGISTRAR

Annexure – III

Units of Quarterly Assessment of Every student (Internal)

Formative Assessment – Quarterly Assessment (Total 12 CIAs)

As per Annexure III.

1. **Journal Based / Recent Advances learning**
   (Bases on Journal Clubs / Select Article Presentation , Review Article preparation and presentation)
2. **Patient Based and Laboratory Based and skill Based learning**
   (Based on clinical Posting – OPD / IPD Ward Rounds/ casualty/ Case Examination/ presentation /Diagnosis / Interpretation /of Clinical Diagnostics/ Differential Diagnosis, Prognosis/ Morbidity/ Mortality/ Community Medicine/ Promotion/ prevention/ Control/ Prophylaxis/ Epidemiology/ Simulation Studies/ Skill Based Studies and so on)
3. **Self Directed Learning and Teaching**
   (Seminars Panel Discussion Group Discussion, Assignments, Case studies, Preparation of Charts and Models etc. , Role Play, Debates, Moot courts, etc)
4. **Departmental and Inter Departmental Learning Activities.**
   (Participation in UG/PG teaching / Horizontal and Vertical Integrated Lectures, Clinical meeting / CPC / CME)
5. **External and out research Activities**
   (Participation in Camps, Posting and Visit to PHCs, Satellite clinics, Mobile Clinics, Health checkup Camps, Blood Donation Camps, Immunization Camps school Visits. Crisis / Disaster Management, Celebration of Commemorative Days and soon)
6. Thesis / Dissertation Research Work related to selected Topic
7. a) Log Book maintenance/ Portfolio management - To maintain LOG Book or portfolio management of all the TL Activities
   b) Presentation / Publications of Research Article

No.		Particulars	Minimum for 3 months
1		Journal based Recent Advance Learning- Presentation of select Article in Journal clubs	3
2	a	Patient Based laboratory or Skill based learning- Case presentation / Clinic	1 (1st year) 2 (2nd & 3rd year)
	b	Skill Lab / Simulation Lab Work	1
3	a	Self Directed Learning & Teaching- Presentation of Seminar	1
	b	Leading a Group Discussion on select Topic in GD	1
	c	Assignment Submission	1
4	a	Lecture / Tutorials / Panel Discussions with UG students	1
	b	Clinical Meetings (CME's) CPC/Dept. meeting	3
5		Medical Camps	1
6		Dissertation Work Research methodology workshop	Yes / No
7		Log Book & Attendance	Yes / No
8		Any other Activity Prescribed (T/P/Viva)	Yes / No

HOD HOI DEAN OF FACULTY REGISTRAR

Annexure IV

Postgraduate Students Appraisal Form
Pre / Para /Clinical Disciplines – MD/MS Degree

Name of the Department/Unit : Roll No.:
Name of the PG Student :
Period of Training : FROM……TO……

Quarterly Assessment (1/2/3/4/5/6/7/8/9/10/11/12)

Sr. No.	PARTICULARS	Not Satisfactory			Satisfactory			More Than Satisfactory			Remarks
		1	2	3	4	5	6	7	8	9	
1.	Journal based / Recent advances learning										
2.	Patient based/Laboratory or Skill based learning										
3.	Self-directed learning and teaching										
4.	Departmental and interdepartmental learning activity										
5.	External and Outreach Activities / CMEs										
6.	Thesis / Research work										
7.	Log Book Maintenance										
8.	Performance in Theory/Practical/Viva voce Tests										
	Overall Assessment										

- **Publications of Research Article Yes/ No**
- **Presentation of Research Article**
- **The student has complied with mandatory requirement for quarterly assessment & presentation of Research Profile Yes/No**

Remarks*_____
_____
_____

***REMARKS: Any significant positive or negative attributes of a postgraduate student to be mentioned. For score less than 4 in any category, remediation must be suggested. Individual feedback to postgraduate student is strongly recommended.**

SIGNATURE OF ASSESSEE **SIGNATURE OF HOD**

HEAD OF THE INSTITUTION

Annexure - V

Mandatory Requirements to be eligible to eligible to appear for university Summative Examination / Evaluation – As per MCI Regulations.

(As per MCI Medical Education Regulation 2000, amended from time to time till date)

1. Minimum percent of Attence as per MCI Regulations.
2. Satisfactory performance in 12 CIA conducted and certified by HOD HOI and PG Guide.
3. Certificate from F.O. stating that all the fees due from the student are paid and credited to PIMS-DU A/.c
4. Presentation of a Research Article / Poster in a national / state level conference /Seminar / Workshop.
5. Publication of a Research Articles as first – author in (indexed in supus or web of science or as fixe by MCI Regulations and visited by UGC (ARE list).
6. a) Thesis – Finalisation of Topic and Title – submission of Synopsis following IEC clearance within 6 months of Adm. Topics
   b) After II year of a Admission or 3 terms Midterm Review .
   c) Thesis to be submitted at least 6 months before final examination.
   d)Thesis to be examined by 3 Examiners. (1 Internal and 2 External PG Examiners)
   e) Its Acceptance is a must for appearing for University T & P Exam

Note :- HOD & HOI shall ensure provisions of 1,2,3,4,5,6 a,b,c. The COE shall ensure provisions of 1,2,3,4,5,6 a,b,c ,d,e & e as per MCI Regulations

HEAD OF DEPARTMENT **HEAD OF INSTITUTION** **DEAN OF FACULTY** **REGISTRAR**

Annexure - VI

Ref. No. Date: _____

Complaince to MCI's Regulations Governing Post Graduate Programme in Medical Faculty

Department of _____ PG Programme: MD/ MS in _____

Name of Candidate: _____, JR-III

PRN No. _____ Date of Admission _____

Certification on
Attendance and Training Completion
Publication & Presentation of Research Articles (Poster/ Oral)
Submission of Dissertation & Payment of All types of prescribed fees

It is hereby certified that the said candidate JR-III in the Dept. of _____ at Rural Medical College has completed 6 academic terms/ 3 academic years and fulfilled the prevailing provisions of the MCI Regulations governing MD/MS PG programmes and the rules of PMT, PIMS-DU. Details are as under.

1.	**Attendance Fulfillment ***	**% Attendance**	**Remark – Eligibility**
	I Academic Term		
	II Academic Term		
	III Academic Term		
	IV Academic Term		
	V Academic Term		
	VI Academic Term		
	Overall fulfillment		Fulfilled / Not Fulfilled
	* Fulfillment of a minimum of 80% of attendance/ academic term, for 6 terms/ 3 years including imparted training, assignment, fulltime responsibilities and participation in all facets of PG education process including periodic assessment and so on as per MCI Regulations.		
2.	Log Book maintained as per MCI Regulations & Fulfilled the graded responsibilities in the management and treatment of patients entrusted for their care Verified by Dr. _____ Certified by Dr. _____		Yes/ No
3.	Successful participation in teaching and training programmes organized by the department for UG and Interns		
4.	Presented and Participated in Seminars, Journal Clubs, Case Presentations, Group Discussions, Clinical Meetings, CME Ward Round, CPC, Practicals organized by the Department as per the timetable.		
5.	Participated in training sessions in diagnostics, medical/ surgical training, in basic/ applied medical and allied clinical specialties and Medical Camps as per the timetable		
6.	The Performance of the PG students in 12 CIAs (Conducted quarterly) are satisfactory as per appraisal proforma as per MCI Regulations.		
7.	Presented one research poster and one research article (oral) in a Seminar/ Symposia/ Workshop/ Conference (National/State). The certificates for		

	presentation of paper/ poster are enclosed.	
8.	Published one research article in a scientific journal as per norms. The copy of the published research article is enclosed.	
9.	Submitted a Dissertation entitled _____ _____ _____ _____ under the guidance of Dr. _____	
10.	Paid all the fees (tution fees and other fees) vide receipt No._____ for all 3 years.	
11.	Produced NOC from all the sections of PMT PIMS-DU concerned about "NO DUES"	
12.	Paid Examination fees of Rs. _____ vide Challan/ Receipt No. _____ dated _____ issued by Finance Officer PIMS-DU.	

It is hereby declared that the all the duly certified and verified documents, related to the aspects mentioned above, are in the custody of department concerned and student section of Rural Medical College with due authentication and signature of concerned HOD/ Dean/ Principal/ Dean of Faculty) and will be made available for any MCI inspection as per norms and Regulations.
Accordingly He/She is eligible/ not eligible for appearing in final year PG examination as per the MCI Regulations governing PG Programmes.

PG Guide
Dr. _____

Seal

Head of the Department
Dr. _____

Verified and certified that all types of prescribed fees and fines PMT, PIMS-DU, College, Hostel & Others mentioned at sl.no. 10, 11, 12 are paid by the student and credited to the accounts of PMT & PIMS-DU.

Seal

Finance Officer
PIMS-DU

Verified the relevant documents and certify that the candidate is eligible to appear for final year PG Examination as per MCI Regulations and rules of PIMS-DU.

Dean
Faculty of Medicine

Seal

Dean
Rural Medical College

Ref_____ **For Officer Use Only** Date: _____

The HOD, HOI and Dean have certified that the

a. Candidate is eligible to appear for PG Theory and Practical/ Clinical Examination as per MCI Regulations. F.O. has certified that all the fees has been credited to PMT, PIMS-DU Accounts.

b. The Dissertation submitted has been evaluated by external examiners and then have approved the same for acceptance as per MCI Regulations.
c. Hence the candidate be permitted to appear for the PG examinations (Theory & Practical/ Clinical) scheduled in the month of _____ year _____.

Controller of Examinations

Seal

Submitted for perusal and approval

Vice Chancellor

Annexure – VII

PRAVARA INSTITUTE OF MEDICAL SCIENCES
(Deemed to be University)

Post Graduate Degree in General Medicine (MD)

Examination _____ 20__

Paper – I/ II/ II/ IV

Paper Title : _____ **Date: / /20**

Marks : 100 **Time:**

Instructions to candidate:

1) All questions are compulsory
2) Answer written in illegible handwriting will not be assessed.
3) Write answers on both sides of answer paper.
4) Neat diagrams must be drawn wherever necessary.
5) Write prescription where indicated, and in the use of drugs their doses should be given.

Que. 1		Marks 20
Que. 2		Marks 20
Que. 3		Marks 20
Que. 4	Write Short notes on	Marks 40 (10x4)
	a	
	b	
	c	
	d	

Annexure – VIII

Table 1: Showing BLUEPRINTING for theory paper setting

The number of Questions & their distribution of marks shall be as per MCI model Question Paper [only Illustration]

LAQ/ SAQ and their Marks

LEVEL	Q	Q	Q	Q	Q	Q	Q	Total
	Mark	Mark	Mark	Mark	Mark	Mark	Mark	
Knowledge								
Comprehension								
Application								
Analysis								
synthesis								
Evaluation								
TOTAL								**1000**

The Questions (Whether LAQ or SAQ) Must aim at assessing all the 6 domains

Note: This is only an illustration. Actual Number of Questions and their distribution of marks shall be as per model Question Paper of MCI. (i.e. regarding the number of LAQ / SAQ and their marks distribution)

Table 2: Showing appropriate verbs suitable to level of knowledge for theory paper setting

Level	Suggested Verbs
Knowledge	Define, Describe, Draw, Find, Enumerate, Cite, Name, Identify, List, label, Match, Sequence, Write, State
Comprehension	Discuss, Conclude, Articulate, Associate, Estimate, Rearrange, Demonstrate understanding, Explain, Generalize, Identify, Illustrate, Interpret, Review, Summarize
Application	Apply, Choose, Compute, Modify, Solve, Prepare, Produce, Select, Show, Transfer, Use
Analysis	Analyze, Characterize, Classify, Compare, Contrast, Debate, Diagram, Differentiate, Distinguish, Relate, Categorize
Synthesis	Compose, Construct, Create, Verify, Determine, Design, Develop, Integrate, Organize, Plan, Produce, Propose, rewrite
Evaluation	Appraise, Assess, Conclude, Critic, Decide, Evaluate, judge, Justify, Predict, Prioritize, Prove, Rank

Table 3: Showing examples of theory questions

Sr. No.	Type	Explanation	Examples
1	**Long essay question**	✓ Question should pose clinical problem that will require student to apply knowledge along with integration with disciplines ✓ Avoid one liner as question ✓ Question stem should be structured ✓ Marking distribution should be provided ✓ Use of proper verbs from higher domains as given in this document ✓ Avoid recall based questions	
2	**Short notes**	✓ Sample a wider content ✓ Questions should be task oriented ✓ Reasoning questions provide opportunity for testing integration, clinical reasoning and analytical ability of the student	

Table 4: Showing Objective structured clinical examination [OSCE] typical station

Sr. No.	Type of station	Time allotted	Example	Evaluation
1	Procedure			
2	Response			

Annexure – IX

University Examination
Model Marks Sheet
For Practical / Clinical Examination and Viva voce

Duration _____ **Max Mark – 400**

Illustration only

No.	Type of Examination	Marks Allotted	Scored
1	**Long Cases**		
2	**a) Short cases (No. of small cases and Marks for each cases) 1/2/3/4-------- b) Ward Round c) Any other**		
3	**Spotter / OSPE/ Oral / Vivavoce Sub Divisions i) iv) ii) v) iii) vi)**		
	Ground Total	**400**	

PG Examiners		Name	Signature
1	**Chairman Name**		
2	**Internal Examiner**		
3	**External Examiner**		
4	**External Examiner**		

Date:-
Place :-

Note:- 1) The Number of cases, type of cases and type of practical and orals / vivavoce and their distributions of marks shall be as per MCI Regulations / Syllabi.

2) The HOD / Chairman / Co Chairman BOS shall ensure at this proforma is prepared as per the MCI Regulations / Syllabi.

PRAVARA INSTITUTE OF MEDICAL SCIENCES * Loni - 413736 Tal - Rahata Dist. Ahmednagar (M.S. India) * (Deemed to be University)

Registrar
Pravara Institute of Medical Sciences
(Deemed to be University)
Loni - 413736,Tal. Rahata
Dist. Ahmednagar (M.S. India)