



**YENEPOYA**

(DEEMED TO BE UNIVERSITY)

Recognized under Sec 3(A) of the UGC Act 1956

Accredited by NAAC with 'A' Grade

## **YENEPOYA (DEEMED TO BE UNIVERSITY)**

**Deralakatte, Mangaluru -575018**

### **REGULATIONS AND CURRICULUM GOVERNING**

### **POSTGRADUATE PROGRAM (MD) IN**

### **RESPIRATORY MEDICINE**

**(REVISED CURRICULUM – AMENDED UP TO 2019)**

**ATTESTED**

**Dr.Gangadhara Somayaji K.S.**  
Registrar  
Yenepoya(Deemed to be University)  
University Road, Deralakatte  
Mangalore-575 018, Karnataka



**YENEPOYA**

(DEEMED TO BE UNIVERSITY)  
Recognized under Sec 3(A) of the UGC Act 1956  
Accredited by NAAC with 'A' Grade

**NOTIFICATION - 34-ACM/2019 dtd. 20.02.2019**

Sub:- Implementation of Competency Based Medical Education PG Curriculum  
Ref. : Resolution of the Academic Council at its 34<sup>th</sup> Meeting held on 08.02.2019 vide  
Agenda 33

\*\*\*\*\*

The Academic Council at its 34<sup>th</sup> Meeting held on 08.02.2019 and subsequently the 45<sup>th</sup> meetings of Board of Management held on 09.02.2019 have accepted the proposal for implementation of Competency Based Medical Education (CBME) for the PG Curricula of the following programs as per the MCI Norms.

1. MD in Pathology
2. MD in General Medicine
3. MD in Anaesthesiology
4. MD in Paediatrics
5. MD in Respiratory Medicine
6. MD in Radio-diagnosis
7. MD in Anatomy
8. MD in Physiology
9. MD in Biochemistry
10. MD in Microbiology
11. MD in Pharmacology
12. MD in Forensic Medicine
13. MD in Psychiatry
14. MD in Dermatology
15. MD in Community Medicine
16. MS in General Surgery
17. MS in OBG
18. MS in Otorhinolaryngology
19. MS in Ophthalmology
20. MS in Orthopaedics

This revised curriculum shall come into effect from the academic year 2019-2020 onwards.

**REGISTRAR**

Yenepoya (Deemed to be) University,  
University Road, Deralakatta  
Mangalore 575 018

## **Index**

1. NAME OF PROGRAMME
2. YEAR OF INTRODUCTION
3. GOALS
4. OBJECTIVES
5. COMPETENCIES
6. SYLLABUS
7. TEACHING PROGRAMME
8. CLINICAL POSTINGS
9. THESIS
10. ASSESSMENT AND EXAMINATIONS
11. JOB RESPONSIBILITIES
12. SUGGESTED BOOKS AND JOURNALS

# 1. NAME OF PROGRAMME

MD RESPIRATORY MEDICINE

## 2. YEAR OF INTRODUCTION

2019-20

## 3. GOALS

The Postgraduate training course would be to train a MBBS doctor who will:

- a. Practice efficiently and effectively, backed by scientific knowledge and skill base.
- b. Exercise empathy and a caring attitude and maintain high ethical standards.
- c. Continue to evince keen interest in continuing education in the specialty irrespective of whether he is in a teaching institution or is the specialty.
- d. Be a motivated 'teacher' – defined as a specialist keen to share his knowledge and skills with a colleague or a junior or any learner.

The aim of teaching the Postgraduate student in Tuberculosis and Chest diseases is to impart such knowledge and skills that will enable him / her to diagnose and manage common as well as uncommon ailments affecting the chest with the special emphasis on management and prevention of Tuberculosis and specifically National tuberculosis control Programme.

## 4. OBJECTIVES

The following objectives are laid out to achieve the goals of the course. These objectives are to be achieved by the time the candidate completes the course. The Objectives may be considered under the subheadings.

- A. Knowledge ( Cognitive domain)
- B. Skills(Psycho motor domain)
- C. Human values , ethical Practice and communication abilities

### A. Knowledge:

- a. Describe indications and methods for fluid and electrolyte replacement therapy including blood transfusion.
- b. Describe common malignancies in the country and their management including prevention.
- c. Demonstrate understanding of basic sciences relevant to this specialty.
- d. Identify social, economic, environmental and emotional determinants in a given case, and take them into account for planning therapeutic measures.
- e. Recognize conditions that may be outside the area of his specialty/competence and to refer them to the proper specialist.
- f. Advice regarding to operative or non-operative management of the case and to carry out this management effectively.
- g. Update oneself by self study and by attending course , conferences and seminars relevant to the specialty.
- h. Teach and guide his team, colleagues and other students.

- i. Demonstrate sound knowledge of common chest diseases, their clinical manifestations, including emergent situations and of investigative procedures to confirm their diagnosis.
- j. Demonstrate comprehensive knowledge of various modes of therapy used in treatment of respiratory diseases; and be acquainted with the most current guidelines for expert management of the respiratory illnesses.
- k. Demonstrate detailed knowledge of pulmonary as well as extra pulmonary tuberculosis and to offer a comprehensive plan of management (Including National TB control programme, DOTS & DOTS Plus)
- l. Describe the mode of actions of commonly used drugs, their doses, side-effect / toxicity, indications and contra- indications and interactions;
- m. Describe commonly used modes of management including medical and surgical procedures available for treatment of various diseases and to offer a comprehensive plan of management.

## **B. Skills**

The student shall be able to;

- a. Interview the patient, elicit relevant and correct information and describe the history in chronological order,
- b. Conduct clinical examination, elicit and interpret clinical findings and diagnose common respiratory disorders and emergencies;
- c. Perform simple, routine investigative and office procedures required for making the bedside diagnosis, especially sputum collection and examination for etiologic organisms especially acid fast bacilli(AFB), interpretations of the chest x-rays and respiratory function tests;
- d. Interpret and manage various blood gases and pH abnormalities in various respiratory diseases;
- e. Manage common recognizing need for referral for specialized care, in case of inappropriateness of therapeutic response;
- f. Perform common procedure like laryngoscopic examination, pleural aspiration, respiratory physiotherapy, laryngeal intubations and penumo-thoracic drainage / aspiration.
- g. Perform special diagnosis/therapeutic procedures such bronchoscopy, lung biopsy, pleural biopsy, thoracoscopy etc.
- h. Deliver the intensive respiratory care effectively by means of expertise in mechanical ventilations and related procedures, respiratory and metabolized functional assessment.

## **C. Human values, ethical practice and Communication abilities**

- a. Adopt ethical principles in all aspects of his / her practice. Professional honesty and integrity are to be fostered. Care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- b. Develop communication skills, in particular the skill to explain various options available in management and to obtain a true informed consent from the patient.
- c. Provide leadership and get the best out of his team in a congenial working atmosphere.
- d. Apply high moral and ethical standards while carrying out human or animal research.
- e. Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed.
- f. Respect patient's rights and privileges including patient's right to information and right to seek a second opinion.

## 5. COMPETENCIES

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

### A. Cognitive domain

**At the end of the MD course in Pulmonary Medicine, the students should be able to:**

1. Demonstrate sound knowledge of common pulmonary diseases, their clinical manifestations, including emergent situations and of investigative procedures to confirm their diagnosis. A comprehensive knowledge of epidemiological aspects of pulmonary diseases should be acquired.
2. Demonstrate comprehensive knowledge of various modes of therapy used in treatment of pulmonary diseases.
3. Describe the mode of action of commonly used drugs, their doses, side-effects / toxicity, indications and contra-indications and interactions.
4. Describe commonly used modes of management including medical and surgical procedures available for treatment of various diseases and to offer a comprehensive plan of management inclusive of National tuberculosis Control Programme.
5. Manage common pulmonary emergencies and understand the basic of intensive care in patients with pulmonary diseases.
6. Practice the field of pulmonary medicine ethically and assiduously, show empathy and adopt a humane approach towards patients and their families.
7. Recognize the national priorities in pulmonary medicine and play an important role in the implementation of National Health Programmes including tuberculosis.
8. Demonstrate competence in medical management.
9. Should inculcate good reading habits and develop ability to search medical literature and develop basic concept of medical research.

## **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**

**At the end of the course, the student should acquire following clinical skills and be able to:**

1. Interview the patient, elicit relevant and correct information and describe the history in chronological order.
2. Conduct clinical examination, elicit and interpret clinical findings and diagnose common pulmonary disorders and emergencies.
3. Perform simple, routine investigative and office procedures required for making the bedside diagnosis, especially sputum collection and examination for etiologic organisms especially Acid Fast Bacilli (AFB), interpretation of the chest x-rays and lung function tests.
4. Interpret and manage various blood gases abnormalities in various pulmonary diseases.
5. Develop management plans for various pulmonary diseases.
6. Assist in the performance of common procedures, like bronchoscopic examination, pleural aspiration and biopsy, pulmonary physiotherapy, endotracheal intubation and pneumo-thoracic drainage / aspiration etc.
7. Recognize emergency situations in intensive care, respond to these appropriately and perform basic critical care monitoring and therapeutic procedures.
8. Collect, compile, analyse, interpret, discuss and present research data.
9. Teach pulmonary medicine to undergraduate and postgraduate students.

To acquire the above skills, the student should be exposed and trained in the following tests and procedures:

### **1. Diagnostic tests: Performance and interpretation**

- Sputum and other body fluids examination with ZN stain for AFB, culture methods for pathogenic bacteria, fungi and viruses
- Newer diagnostic techniques for tuberculosis including molecular techniques
- FNAC of lung masses (blind and image-guided)
- Arterial blood gas analysis and pulse oximetry
- Imaging: Interpretation of plain radiography, ultrasound examination, Computed tomogram, PET scan, MRI
- Sputum cytology
- Simple haematological tests
- Immunological and Serological tests
- Polysomnography (full-night and split-night studies) including CPAP
  - titration; evaluation of daytime sleepiness
- Cardiopulmonary exercise testing
- Pulmonary function tests and interpretation (Spirometry, lung volume, diffusions, body plethysmography, other lung function tests)
- Bronchoprovocation tests
- BCG vaccination
- Mantoux testing; interferon gamma release assays
- Bronchoscopy: fiberoptic/rigid, diagnostic and therapeutic
- ECG, 2D and Doppler echocardiography
- Venous Doppler ultrasound
- Skin tests for hypersensitivity
- Sputum induction and non-invasive monitoring of airway inflammation
- Medical thoracoscopy

## **2. Therapeutic procedures**

- Fine needle aspiration and other guided procedures
- Tube thoracostomy



- Cardiopulmonary rehabilitation exercises
- Postural drainage
- Pleural biopsy, lymph node biopsy
- Administration of inhalation therapy
- Administration of oxygen therapy
- Administration of continuous positive airway pressure (CPAP)/ Bilevel
  - Positive Airway Pressure (BiPAP)
- Monitoring and emergency procedures in intensive care

## 1. INTEGRATION OF TEACHING

The broad goal of effective teaching can be obtained through integration with departments of Medicine, Surgery, Microbiology, Pathology, Pharmacology and PSM. This shall enable the student to be acquainted with diagnosis and management of common / uncommon systemic diseases that may affect the management of various chest diseases.

## 2. COURSE CONTENTS

### Theory

- a. Basic Sciences including Anatomy, Physiology, Pathology, Microbiology and Pharmacology.
- b. Arterial blood gases and acid base disturbance.
- c. Tuberculosis– Pulmonary/Extra–Pulmonary and allied topics in Tuberculosis.
- d. Non-Tubercular Respiratory Diseases.
  1. Immunology of respiratory diseases.
  2. Upper respiratory tract infection
  3. Pneumonia
  4. Emphysema
  5. Lung abscess
  6. Disease of Pleura
  7. Fungal infections of the lung
  8. Chronic bronchitis and emphysema
  9. Pulmonary hypertension
  10. Respiratory failure
  11. Bronchiectasis
  12. Parasitic diseases of the lung

13. Sarcoidosis
14. Bronchial asthma
15. Pulmonary eosinophilia, PAN, Wegener's granulomatosis
16. Pneumothrax and mediastinal emphysema
17. Pulmonary thrombo embolism
18. Occupational lung diseases
19. Tumours of the lung
20. Diffuse fibrosing alveolitis
21. Respiratory manifestations of systemic diseases
22. Hyaline Membrane Diseases, Cystic Fibrosis Goodpasture's syndrome
23. Disease of mediastinum
24. Diseases of chest wall
25. Disease of diaphragm
26. Lung transplantation

## **6. SYLLABUS**

### **A. RESP. INFECTIONS:**

- A.1 Pneumonia
- A.2 Viral
- A.3 Fungal
- A.4 Parasitic
- A.5 HIV & Lung Diseases

### **B. TUBERCULOSIS**

- B.1 Etiopathogenesis
- B.2 Pathology
- B.3 Diagnosis
- B.4 Clinical Features
- B.5 Treatment
- B.6 Programmes: NTCP, RNTCP
- B.7 BCG Vaccination
- B.8 Extra Pulmonary TB
- B.9 Special Emphysema
- B.10 Newer Diagnosis Tests
- B.11 MDR – TB
- B.12 HIV & TB
- B.13 Tuberculin Test
- B.14 Special Situations - Pregnancy, Liver & Renal Diseases & other special situations

## **C. SUPPURATIVE DISEASES**

**C.1** Lung Abscess

**C.2** Bronchiectasis

**C.3** Empyema

Special Emphasis – Postural Drainage

## **D. DESTRUCTIVE AIRWAY DISEASES**

**D.1** Asthma

**D.2** COPD

**D.3** Acute Bronchitis

**D.4** Special Emphasis

a. PFT

b. Occupational Asthma

c. Sleep Apnea Syndromes

d. Pharmacology

## **E. RESPIRATORY LUNG DISEASES**

**E.1** Interstitial Lung Diseases

**E.2** Fibrosing Alveolitis

**E.3** Sarcoidosis

**E.4** Pneumoconiosis

**E.5** Special Emphasis On:-

a. Latest Diagnostic Classification

b. Treatment & Monitoring

## **F. MALIGNANCIES – LUNG & PLEURAL**

**F.1** Special Emphasis

a. Staging & Chemotherapy

## **G. PLEURAL DISORDERS**

**G.1** Pleuritis

**G.2** Pleural Effusions

**G.3** Pneumothorax

**G.4** Chylothorax

**G.5** Haemothorax

**G.6** Special Emphasis

a. ICD management

## **H. INTENSIVE RESP. CARE**

- H.1 Ventilatory Management**
- H.2 Airway Care**
- H.3 Resp. Function Monitoring**
- H.4 Special Emphasis**
  - a. Non Invasive Ventilation
  - b. Ventilation Related Procedures
  - c. Ventilation Associated Pneumonia

## **I. LUNG INVOLVEMENT IN SYSTEMIC DISEASE**

- I.1 Collagen Disorders**
- I.2 Neurological Disorders**
- I.3 Renal & Cardiac Diseases**
- I.4 Auto- Immune Disorders**
- I.5 Congenital Disorders**

## **J. MEDIASTINAL DISORDERS**

- J.1 Generalized & Localized Diseases involving**
- J.2 Nerves**
- J.3 Cysts**
- J.4 Infections**
- J.5 Special Emphasis**
  - a. Diagnostic Approach

## **K. APPLIED ANATOMY & PHYSIOLOGY**

- K.1 Lung & Pleura**
- K.2 Ventilation, Perfusion of Lung**
- K.3 Gas Transfer**
- K.4 O<sub>2</sub> Transport**
- K.5 Respiratory Muscles**
- K.6 Special Emphasis**
  - (a) Exercise Testing
  - (b) PFT

## **L. CARDIOLOGY**

- L.1 Myocardial Disorders**
- L.2 Arrhythmia**
- L.3 IHD**
- L.4 Valvular Heart Diseases**
- L.5 Congenital Heart Diseases**

## **M. DIAGNOSTIC & THERAPEUTIC PROCEDURES**

- M.1** Sputum Examinations
- M.2** Bronchoscopy & Related Procedures
- M.3** Transcutaneous Biopsies
- M.4** Pleural Procedures:-
- M.5** Pleurocentesis, Biopsy, Pleurodesis ICD
- M.6** Thoracoscopy
- M.7** Sleep Studies
- M.8** PFT & Exercise Testing

## **N. COUNSELING OF RESPIRATORY PATIENTS**

- N.1** Asthma
- N.2** COPD
- N.3** TB
- N.4** HIV
- N.5** Chronic Resp. Failure
- N.6** Pulmonary Rehabilitation

## **O. RESEARCH METHODOLOGY**

- O.1** Protocol Planning
- O.2** Inclusion / Exclusion Criteria
- O.3** Ethical Issues
- O.4** Responsibilities of Investigation & Institute
- O.5** Funding Agencies & Superwising Agencies
- O.6** Good Clinical Practice & ICMR Guidelines

## **P. GENERAL MEDICINE**

- P.1** Hypertension
- P.2** Diabetes
- P.3** Electrolyte & Fluid Systems
- P.4** Approach to Various Systems
- P.5** Common Infections
- P.6** ENT Disorders (Allergic Rhinitis / Polyps)
- P.7** Liver Diseases
- P.8** CNS Disorders
- P.9** Poisoning

## 7. TEACHING PROGRAMME

- A. Journal club – Once a week
- B. PG Discussions – on management protocol for common diseases at least once a week + as required
- C. Active participation in at least one research activity of the department, other than the dissertation.
- D. Case presentation & Discussion – at least once a week in addition to routine ward activities,
- E. Integrated teaching: - Participation in case discussions.
- F. Seminar – Once a week
- G. Mortality Meeting – Once a month

A candidate pursuing the course should work in the institution as full time student. No candidate should be permitted to run a clinic / laboratory / nursing home while studying postgraduates course. Each year should be taken a unit for the purpose of calculating attendance.

Every student shall attend teaching and learning activities during each year as prescribed by the department and not absent himself / herself from work without valid reasons.

A list of teaching and learning activities designed to facilitate students acquire essential knowledge and skills outlined is given below. Depending on the facilities available, any or all of these methods may be employed. However, the activities for which details are given are mandatory.

- H. Lectures: Lectures are to be kept a minimum. They may, however, be employed for teaching certain topics. Lectures may be didactic or integrated.
  - a. Didactic Lectures: Recommended for selected common topics for postgraduate students of all specialties. Few topics are suggested as examples:
    1. Bio- statistics
    2. Use of library
    3. Research Methods
    4. Medical code of Conduct and Medical Ethics
    5. National Health and Disease Control Programmes
    6. Communication Skills etc.

These topics may preferably taken up in the first few weeks of the 1<sup>st</sup> year.

- a. Integrated Lectures: These are recommended to be taken by multidisciplinary teams for selected topics, e.g. Jaundice, Diabetes mellitus, Thyroid etc.
- I. Journal Club:** Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. Further, every candidate must make a presentation from the allotted journal (s), selected articles at least four times a year and a total of 12 seminar presentations in three years. The presentations would be evaluated using check list and would carry weightage for inter assessment. A timetable with names of the student and the moderator should be announced at the beginning of every year.
- J. Subject Seminar:** Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log book relevant details. Further, every candidate must present on selected topics at least four times a year and a total of 12 seminar presentations in three years. The presentations would be evaluated using check lists and would carry weightage for internal assessment. A timetable for the subject with names of the student and the moderator should be scheduled at the beginning of every year.
- K. Student symposium:** Recommended as an optional multidisciplinary programme. The evaluation may be similar to that described for subject seminar.
- L. Ward Rounds:** Ward rounds may be service or teaching rounds.
- a. Service rounds: Postgraduate students and Interns should do every day for the care of the patients. Newly admitted patients should be worked up by the PG's and presented to the seniors the following day.
  - b. Teaching rounds: every unit should have 'grand rounds' for teaching purpose. A diary should be maintained for day to day activities by the students.

Entries of (a) and (b) should be made in the Log Book .

- M. Clinico – Pathological Conference:** Recommended once a month for all Postgraduate students. Presentation be done by rotation. If cases are not available due to lack of clinical postmortems, it could be supplemented by published CPCs.
- N. Inter Departmental Meetings:** Strongly recommended particularly with departments of Pathology and Radio-Diagnosis at least once a week. These meetings should be attended by Postgraduate students and relevant entries must be made in the Log book.
- Pathology: A dozen interesting cases may be chosen presented by the Postgraduate students and discussed by them as well as the senior staff of Surgery department. The staff of Pathology department would then show the slides and present final diagnosis. In these sessions the advance immune-histo-chemical techniques, the burgeoning markers other recent developments can be discussed.
- Radio- diagnosis: Interesting cases and the imaging modalities should be discussed.

- O.** Microbiology: Collection of specimen, AFB staining, Culture techniques and interpretation
- P.** Work in PFT laboratory.
- Q.** Teaching skills: Postgraduate students must teach under graduate students (Eg. Medical, nursing) by taking demonstrations, bedside clinics, tutorials, lectures etc. Assessment is made using a checklist by surgery faculty as well students. Record of their participation be kept in Log book. Training of Postgraduate students in Educational Science and Technology is recommended.
- R.** Continuing Medical Education Programmes (CME) : Recommended that at least 2 state level CME Programmes should be attended by each student in 3 years.
- S.** Conferences: Attending conferences is optional. However it is encouraged.

## 8. CLINICAL POSTINGS

- |                                  |           |
|----------------------------------|-----------|
| 1. Cardiology                    | - 1 month |
| 2. Department of Radio–diagnosis | - 1 month |
| 3. Casualty                      | - 2 weeks |
| 4. ICU                           | - 2 weeks |
| 5. Cardio–Thoracic Surgery       | - 1 month |
| 6. Radiotherapy/Oncology         | - 1 month |

### 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.

The learning out comes to be assessed should included: (a) Personal Attitudes, (b) Acquisitions of Knowledge, (c) Clinical and operative skills, (d) Teaching skills and (e) Dissertation.

#### **a. Personal Attitudes.** The essential items are:

- Caring attitudes
- Initiative
- Organizational 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 required a degree of subjective assessment by the guide, supervisors and peers.

**b. Acquisitions 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 depth 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

*Seminars/Symposia:* The topics should be assigned 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.

*Clinico–pathological conferences:* This should be a multidisciplinary case 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 assessment.

**c. Clinical skills:**

*Day to Day work:* Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates' sincerity and punctuality, analytical ability and communication skills.

*Clinical meetings:* Candidates should periodically present cases to his peers and faculty members. This should be assessed using a checklist.

*Clinical and Procedural skills:* The candidates 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 in the log book.

**d. 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.

**e. Dissertation in the Department:**

Periodic presentations are to be made in the department. Initially the topic selected is to be presented before submission to the university, for registration, again before finalization for critical evaluation and another before final submission of the completed work.

**f. Periodic tests:**

The departments may conduct three tests, two of them be annual tests, 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, practices / clinicals and viva voce.

**g. Work dairy / Log Book:**

Every candidate shall maintain a 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, if any conducted by the candidate.

**h. Records:**

Records, log books and marks obtained in test 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 book 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.

Postgraduate student diary should include following activities.

Format for PG Diary (Log Book)

1. Cases seen on rounds- description of interesting cases and other miscellaneous topics discussed
2. Outpatient cases seen and details of interesting cases with follow up .
3. Procedure done on inpatient and outpatient and consultation done.
4. Undergraduate teaching done during the day with details
5. PG training programmes attended – details of bedside clinics, basic sciences, subject and clinical seminars, Journal clubs, mortality meet and hospital conference.
6. Night duties- details of patients managed and emergencies consultation. Ward calls attended.
7. Details of study with topics covered during off hours in library / home. Periodicals and Journals reviewed with notes on interesting articles.
8. Medical meetings, Seminars, Local API /CSI meetings or other interesting CME, seminars attended.
9. Diary should be reviewed on weekly basis by unit faculty and certified on monthly basis for P.G's benefit at the end of each Medical / Specialty rotation. Faculty should comment regarding absences and irregularities (Late arrivals and early departure) and make appropriate comments and suggest remedial measure for problematic prodigies.
10. Size of note book: 15cm with 200 pages. All note books should have seal of college and H.O.D's approval: Extra note books may be utilized as and when necessary. Diaries should be presented at the University clinical exam for review by examiners as per University regulations.

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

## **Internal evaluation of P.G students performance during three years**

### **I year M.D Students**

Assessment of students with multiple choice questions multiple short notes covering wide range of topics and practical examination with attention to history taking clinical skills, relevant diagnostics and therapeutic plans ascertained. Suggested time of evaluation after first six months and at the end of first year rotation.

### **II year M.D Students**

Students should be evaluated at the end of II year on Theory and Practical examinations along with one faculty from General Medicine. For other specialties with short rotations of one month may evaluate the candidate for comprehension of the subject and clinical skills.

### **III year M.D Students**

P.G's should be evaluated at the beginning of his 3<sup>rd</sup> year training by panel of senior Postgraduate teachers. Suggested pattern of assessment with two essay type theory papers and multiple choice questions (200)– clinical skills, diagnostic and therapeutic skills evaluated intermittently by unit faculties.

Mock examination suggested – 3 to 4 months prior to final university exam should consist of two question papers each 3 hours duration, and Clinical and viva voce similar to university examination under the supervision of senior faculty.

Results of all evaluations should be entered into P.G 's diary and departmental file for documentation purposes. Main purpose of periodic examination and accountability is to ensure clinical expertise of students with practical and communication skills and balance broader concept of diagnostic and therapeutic challenges.

## 9. THESIS

1. Every candidate pursuing MD /MS degree course is required to carry out work on a selected research project under the guidance of a recognized postgraduate teacher. The results of such a work shall be submitted in the form of a dissertation.
2. The dissertation is aimed to train a postgraduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis, search and review of literature, getting acquainted with recent advances, designing of research study, collection of data, critical analysis, comparison of results and drawing conclusions.
3. Every candidate shall submit to the Registrar (Academic) of RGUHS in the prescribed Performa, a synopsis containing particulars of proposed dissertation work six months from the date of commencement of the course on or before the dates notified by the University. The synopsis shall be sent through the proper channel.
4. Such synopsis will be reviewed and the dissertation topic will be registered by the University. No change in the dissertation topic or guide shall be made without prior approval of the university.
5. The dissertation should be written under the following headings:
  - a. Introduction
  - b. Aims or Objectives of study
  - c. Review of Literature
  - d. Material and Methods
  - e. Results
  - f. Discussion
  - g. Conclusion
  - h. Summary
  - i. References (Vancouver style)
  - j. Tables
  - k. Annexures
6. The written text of dissertation shall be not less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other annexures. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27'' x11.69'') and bound properly. Spiral binding should be avoided. The dissertation shall be certified by the guide, head of the department and head of the Institution.
7. Four copies of dissertation thus prepared shall be submitted to the Registrar (Evaluation) , six months before final examination on or before the dates notified by the University.

8. The dissertation shall be valued by examiners appointed by the University. Approval of dissertation work is an essential precondition for a candidate to appear in the university examination.

## 10. ASSESSMENT AND EXAMINATIONS

Candidates will be allowed to appear for examination only if attendance (minimum 80%) and internal assessment are satisfactory and dissertation is accepted.

### A. Theory (Written Papers) 400 marks

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 follow:

Paper I: Basic Sciences including Anatomy and Physiology pertaining to Respiratory System

Paper II: Non Tubercular Respiratory infectious Diseases and General Medicine

Paper III: Tuberculosis – Pulmonary and extra pulmonary

Paper IV: Non infectious diseases of lung

**Note: The distribution of chapters/topics shown against the papers are suggestive only.**

### B. Clinical Examination: 200 marks

To elicit competence in clinical skills and to discuss differential diagnostic therapeutic aspects

One Long Case – 100 marks

Two Short cases- 2 x50 marks – one of the cases may be from General Medicine like Diabetes Mellitus, Cirrhosis, simple mitral stenosis etc.

### C. Viva Voce Examination: 100 marks

Aims to elicit candidates knowledge and investigative / therapeutic skills.

1. Viva – voce examination: (80marks)

All examiners will conduct viva- voce conjointly on candidate's comprehension, analytical approach, expression and interpretation of data. It includes all components of course contents. In addition candidates may be given case reports, charts, Spirometry, ABG, gross specimens, histopathology slides, x-rays, ultrasound, CT scan images, etc., for interpretation and questions on these as well as use of instruments will be asked. It includes discussion on dissertation also.

2. Pedagogy Exercise: (20marks)

A topic be given to each candidate in the beginning of clinical examination. He /she is asked to make a presentation on the topic for 8-10mintues.

**D. Maximum Marks**

Theory	Practical	Viva	Grand Total
400	200	100	700

## **11. JOB RESPONSIBILITIES**

### **OPD :**

- History and work up of all cases and presentation to the consultants

### **Indoors :**

- Sending investigations and filling investigation forms and performing procedures such as Pleural Fluid Aspiration, PFT, Bronchoscopy, Polysmonography etc.

### **Ward:**

- History and work up of all cases
- Examination of all patients and documentation of the files.
- Daily Examination of the patients
- Completion of files
- Preparation of discharge summary



## 12. SUGGESTED BOOKS AND JOURNALS

Sl. No.	Name of the books	Name of the Author	Name of the Publication
1.	Text book on Tuberculosis Ed – 1972	K.N.Rao	Kotari Book Depot, Bombay
2.	Respiratory Diseases Ed. 4 <sup>th</sup>	Crofton & Douglas	Blackwell Scientific
3.	Pulmonary Diseases & Disorders III Ed. - 1998	Fishman	McGraw Hill
4.	Principles of internal medicine 14 <sup>th</sup> Ed. – 1998	Harrison	McGraw Hill
5.	Chest Roentgenology 1995	Felson	W.B Saunders company U.S.A. & AITBS, India
6.	Pulmonary Medicines 1 <sup>st</sup> Ed. – 1995	D.Behera	Jaypee Brothers
7.	Principles of Chest x-ray Diagnosis 4 <sup>th</sup> Ed. – 1990	George Simon	Butterworth & Jaypee Brothers
8.	Tuberculosis Case finding and Chemotherapy	Toman.K	WHO, Geneva
9.	Clinical Tuberculosis 2 <sup>nd</sup> Ed.	Davies P.D	Chapman & Hall
10.	Clinical Tuberculosis	Crofton & miller	W.B Saunders
11.	Tuberculosis and non tuberculosis Mycobacterial infections, 4 <sup>th</sup> Ed.	Schlossberg	W.B Saunders
12.	Crofton & Douglas's Respiratory Diseases, 5 <sup>th</sup> Ed.	Seaton	Seaton & Leitch
13.	Respiratory Diseases, 3 <sup>rd</sup> Ed.	Murray & Nadel	WB Saunders
14.	Davidson's Principles and Practice of Medicine. 18 <sup>th</sup> Ed- 1999		Churchil Livingston

### Journals

1.	American Review of Respiratory Diseases	American Thoracic Society
2.	Tubercle	British Thoracic & T.B. Association
3.	Thorax	British Thoracic Society
4.	Chest	American College of Chest Physicians
5.	Indian Journal of Chest Diseases & Allied Science	V.P.Chest Institute, Delhi
6.	Indian Journal of Tuberculosis	Tuberculosis Association of India
7.	Tuberculosis	IUAT
8.	Lung India	Indian chest society
9.	Respiratory Medicine	British Medical Association