



**SHRI
DHARMASTHALA
MANJUNATHESHWARA
UNIVERSITY**

**Ordinance Governing
MD RESPIRATORY MEDICINE
Curriculum**

SHRI DHARMASTHALA MANJUNATHESHWARA UNIVERSITY

(A State Private University established under the Shri Dharmasthala Manjunatheshwara University Act No 19 of 2018 of Government of Karnataka and Notification No. ED 261 URC 2018 dated 19th December 2018)

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|| Om Shri Manjunathaya Namaha ||



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SHRI
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UNIVERSITY

THE LOGO

Poojya Dr D. Veerendra Heggade, Hon'ble Chancellor of the University, while searching for an appropriate Logo for the University, saw a photograph picked from Temple Architecture showing Wings of a Bird, sculpted in Indian style and wanted it to be incorporated in the logo for the University, as the Wings symbolize 'Spreading of Knowledge beyond Boundaries'. Further it was felt that the Central theme of the logo should be 'Rudra' (The Linga) with three wings on each side. In this way, the logo of the University was conceptualized.

Hence:

1. The central part represents **Rudra** who Demolishes Darkness.
2. The Three **horizontal lines on The Linga** stand for Samyak Darshan (Right Belief), Samyak Gyan (Right Knowledge) and Samyak Charitra (Right Conduct).
3. The **Wings** symbolize spreading of Knowledge across the boundaries.
4. Base line "**Truth Liberates**" highlights the Purpose of Education: to liberate oneself unconditionally. It shows that it is not discipline, nor knowledge nor the efforts to freedom that liberate but Truth is what liberates you from all your conditioning and ignorance.

The overall significance of Shri Dharmasthala Manjunatheshwara University's Logo is:

Darkness of ignorance is destroyed by the flow of knowledge to bring Liberty to everyone, by realizing the truth. And, it should spread globally without the



SHRI
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UNIVERSITY

VISION

Shri Dharmasthala Manjunatheshwara University will set the highest standards of teaching and learning by awakening the intelligence of the students and nurturing the creativity hidden in them by creating an environment where the ancient wisdom blends with modern science, to transform them into whole human beings to face the challenges.

MISSION

- ▶ To ensure that the journey of education is inspiring, pleasant and enjoyable.
- ▶ Attract the best of teachers and students.
- ▶ Achieve high principles of trust, love and spirituality in the students.
- ▶ Create a collaborative, diverse and exclusive community.
- ▶ Transform the student of today to be a leader of tomorrow and a better human being.
- ▶ Produce passionate teachers.
- ▶ Evolve innovative teaching techniques.
- ▶ Create a peaceful environment.
- ▶ Prepare the student to face the social challenges.
- ▶ Create a University of which the Nation is proud of.
- ▶ Be an effective partner in Nation Building.
- ▶ Create an Eco-friendly University.
- ▶ Create a University based on the principles of beauty, love and justice.

||Om Shanti! Om Shanti! Om Shanti||



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SDMU/ACD/F-90/Notfn.-229a/694/2021

Date: 31.12.2021

NOTIFICATION

Starting of MD Respiratory Medicine program from the Academic Year 2022-23

- Ref: 1. Minutes of the 9th Meeting of Board of Governors held on 22/12/2021
2. Minutes of the 9th Meeting of Board of Management held on 16/12/2021
3. Minutes of the 5th Meeting of Standing Committee of Academic Council held on 12/11/2021

In exercise of the powers conferred under Statutes 1.1, 1.2 and 1.4 of Shri Dharmasthala Manjunatheshwara University, the Board of Governors has accorded approval to the recommendations of Board of Management and Academic Council for starting of MD Respiratory Medicine program at SDM College of Medical Sciences & Hospital from the academic year 2023-24 with an intake of Three (03) seat per year.

NO:

REGISTRAR
REGISTRAR,
Shri Dharmasthala Manjunatheshwara
University, Dharwad

To: The Principal, SDM College of Medical Sciences & Hospital

Copy for information to:

1. Hon'ble Chancellor, Shri Dharmasthala Manjunatheshwara University
2. Vice Chancellor, Shri Dharmasthala Manjunatheshwara University
3. Director Administration, Shri Dharmasthala Manjunatheshwara University
4. Pro Vice-Chancellor (Academics), Shri Dharmasthala Manjunatheshwara University
5. Controller of Examinations, Shri Dharmasthala Manjunatheshwara University
6. Chairperson, Board of Studies - Medical PG Clinical (Medicine and Allied Subjects)
7. University Records file



**COMPETENCY BASED POST GRADUATE TRAINING PROGRAMME FOR
MD IN RESPIRATORY MEDICINE / PULMONARY MEDICINE**

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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. Evolution of critical care medicine makes it imperative that the post graduates are trained in the basic principles of Pulmonary Medicine as applied to critical care. The person shall be abreast with the recent advances and developments in the speciality of Pulmonary Medicine. It is expected that the person will develop a spirit of enquiry and get oriented to apply recent advances and medical evidence to the practice of pulmonary medicine.

He would also grasp the fundamentals of research methodology. Medical Science is dynamic with a continuous enhancement of knowledge. The process of acquiring knowledge and skills continues even after formal education. The syllabus to be covered during post graduate training in Pulmonary Medicine given below is designed to develop a sound and scientific foundation. It is intended to serve as a guide to impart basic knowledge and develop skills and does not impose any limits to expansion beyond the areas listed.

GOALS

The goal of postgraduate medical education shall be to produce competent specialists and/or medical teachers.

- Who shall recognize the health needs of the community, and carry out professional obligations ethically and in keeping with the objectives of the national health policy
- Who shall have mastered most of the competencies, pertaining to the speciality, that are required to be practiced at the secondary and the tertiary levels of the health care delivery system
- Who shall be aware of the contemporary advance and developments in the discipline concerned
- Who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology
- Who shall have acquired the basic skills in teaching of the medical and paramedical professionals;

SUBJECT-SPECIFIC OBJECTIVES

The primary goal of the MD course in Pulmonary Medicine is to produce post graduate clinicians able to provide health care in the field of pulmonary medicine. It is expected that a physician qualified in Pulmonary Medicine at the end of the course should be able to diagnose and treat pulmonary diseases, take preventive and curative steps for these diseases in the community at all levels of health care and qualify as a consultant and teacher in the subject. Each student should obtain proficiency in the following domains during the period of training

1. Theoretical knowledge of different aspects of Pulmonary Medicine including the status in health and disease.
2. Acquire clinical skills.
3. Acquire practical skills.
4. Management of emergencies including intensive care.
5. Preparation of thesis as per NMC guidelines.

These involve patient management in outpatient, inpatient and emergency situations, case presentations, didactic lectures, seminars, journal reviews, clinico-pathological conferences and mortality review meetings and working in the laboratories.

SUBJECT SPECIFIC 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, and 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

SYLLABUS

Course contents:

The student should acquire knowledge in the following:

I. Basic Sciences

A. Anatomy and Histology of Respiratory System

1. Development and Anatomy of Respiratory System
2. Applied embryology of lungs, mediastinum and diaphragm
3. Developmental anomalies

B. Physiology and Biochemistry

1. Assessment of pulmonary functions
2. Control of ventilation; pulmonary mechanics
3. Ventilation, pulmonary blood flow, gas exchange and transport
4. Non-respiratory metabolic functions of lung
5. Principles of electrocardiography
6. Inhalation kinetics and its implication in aerosol therapy, and sputum induction etc.
7. Acid-base and electrolyte balance
8. Physiology of sleep and its disorders
9. Pulmonary innervation and reflexes
10. Pulmonary defence mechanisms
11. Principles of exercise physiology and testing
12. Physiological changes in pregnancy, high altitude, aging
13. Physiological basis of pulmonary symptoms

C. Microbiology

1. Mycobacterium tuberculosis and other mycobacteria
2. Bacteria causing pulmonary diseases
3. Atypical organisms and respiratory tract infections
4. Anaerobes in pleuropulmonary infections
5. Laboratory diagnosis of non-tubercular infections of respiratory tract
6. Laboratory diagnosis of TB including staining, culture and drug sensitivity testing
7. Virulence and pathogenicity of mycobacteria

8. Respiratory viruses: Viral diseases of the respiratory system and diagnostic methods
9. Respiratory fungi:
 - (i) Classification of fungal diseases of lung: candidiasis, Actinomycosis, Nocardiosis, Aspergillosis, Blastomycosis etc.
 - (ii) Laboratory diagnostic procedures in pulmonary mycosis
10. Opportunistic infections in the immuno-ompromised individuals
11. HIV and AIDS. Virological aspects, immuno-pathogenesis, diagnosis
12. Parasitic lung diseases

D. Pathology

1. Acute and chronic inflammation: Pathogenetic mechanisms in pulmonary diseases
2. Pathology aspects of Tuberculosis
3. Pathology aspects of Pneumonias and bronchopulmonary suppuration
4. Chronic bronchitis and emphysema, asthma, other airway diseases
5. Occupational lung diseases including Pneumoconiosis
6. Interstitial lung diseases including sarcoidosis, connective tissue diseases, pulmonary vasculitis syndromes, pulmonary eosinphilias
7. Tumours of the lung, mediastinum and pleura

E. Epidemiology

1. Epidemiological terms and their definitions
2. Epidemiological methods
3. Epidemiology of tuberculosis, pneumoconiosis, asthma, lung cancer, COPD and other pulmonary diseases
4. National Tuberculosis Control Programme and RNTCP; Epidemiological aspects of BCG
5. Epidemiological aspects of pollution-related pulmonary diseases
6. Research methodology, statistics and study designs

F. Allergy and Immunology

1. Various mechanisms of hypersensitivity reactions seen in pulmonary diseases
2. Diagnostic tests in allergic diseases of lung - in vitro and in vivo tests, bronchial provocation test
3. Immunology of tuberculosis, Sarcoidosis and other diseases with an immunological basis of pathogenesis

G. Pharmacology

1. Pharmacology of antimicrobial drugs
2. Pharmacology of antitubercular drugs
3. Pharmacology of antineoplastic and immunosuppressant drugs
4. Bronchodilator and anti-inflammatory drugs used in pulmonary diseases
5. Drugs used in viral, fungal and parasitic infections
6. Other drugs pharmacokinetics and drugs interaction of commonly used drugs in pulmonary diseases
7. Pharmacovigilance

II. Clinical Pulmonary Medicine

Clinical pulmonary medicine covers the entire range of pulmonary diseases. All aspects of pulmonary diseases including epidemiology, aetiopathogenesis, pathology, clinical features, investigations, differential diagnosis and management are to be covered.

A. Infections

1. Tuberculosis

- Aetiopathogenesis
- Diagnostic methods
- Differential diagnosis
- Management of pulmonary tuberculosis; RNTCP, DOTS, and DOTS Plus;
- International Standards of TB Care
- Complications in tuberculosis
- Tuberculosis in children
- Geriatric tuberculosis
- Pleural and pericardial effusion and empyema

- Mycobacteria other than tuberculosis
- Extrapulmonary tuberculosis
- HIV and TB; interactions of antitubercular drugs with antiretrovirals
- Diabetes mellitus and tuberculosis
- Management of MDR and XDR tuberculosis

2. Non-tuberculous infections of the lungs

- Approach to a patient with pulmonary infection
- Community-acquired pneumonia
- Hospital-associated pneumonia, ventilator-associated pneumonia
- Unusual and atypical pneumonias including bacterial, viral, fungal and parasitic and rickettsial, anaerobic
- Bronchiectasis, lung abscess and other pulmonary suppurations
- Acquired immunodeficiency syndrome and opportunistic infections in immuno-compromised host
- Principles governing use of antibiotics in pulmonary infections
- Other pneumonias and parasitic infections, Zoonosis

B. Non-infectious Lung Diseases

3. Immunological disorders

- Immune defence mechanisms of the lung
- Sarcoidosis
- Hypersensitivity pneumonitis and lung involvement
- Eosinophilic pneumonias and tropical eosinophilia
- Pulmonary vasculitides
- Connective tissue diseases involving the respiratory system
- Interstitial lung disease of other etiologies
- Reactions of the interstitial space to injury, drugs
- Occupational and environmental pulmonary diseases

4. Other non-infectious disorders of the lungs and airways

- Aspiration and inhalational (non-occupational) diseases of the lung
- Drug induced pulmonary diseases
- Bullous lung disease
- Uncommon pulmonary diseases (metabolic, immunological, unknown etiology), pulmonary haemorrhagic syndromes

- Other pulmonary diseases of unknown etiology including PLCH, LAM, PAP, alveolar microlithiasis
- Cystic fibrosis and disorders of ciliary motility
- Obesity-related pulmonary disorders
- Upper airways obstruction syndromes
- Occupational lung diseases and pneumoconiosis
- Air-pollution induced diseases, toxic lung and other inhalational injuries
- Health hazards of smoking
- Drug-induced lung diseases

5. Pulmonary Circulatory disorders

- Pulmonary hypertension and cor pulmonale
- Pulmonary edema
- Pulmonary thromboembolic diseases and infarction
- Cardiac problems in a pulmonary patient and pulmonary complications produced by cardiac diseases

6. Obstructive diseases of the lungs

- Asthma including allergic bronchopulmonary aspergillosis, specific allergen immunotherapy and immunomodulation
- Chronic obstructive lung disease and diseases of small airways
- Special aspects of management including long term oxygen therapy, Inhalation therapy and Pulmonary rehabilitation

7. Tumors of the lungs

- Comprehensive knowledge of neoplastic and non-neoplastic diseases of lung including epidemiology, natural history, staging, and principles of treatment (medical, surgical, and radiation)
- Solitary pulmonary nodule

8. Diseases of the mediastinum

- Non-neoplastic disorders
- Benign and malignant (primary and secondary) neoplasms and cysts

9. Disorders of the pleura

- Pleural dynamics and effusions
- Non-neoplastic and neoplastic pleural diseases
- Pneumothorax
- Pyothorax and broncho-pleural fistula
- Fibrothorax

10. Critical Care Pulmonary Medicine

- Management of emergency problems of different pulmonary diseases
- Adult respiratory distress syndrome
- Respiratory failure in the patient with obstructive airway disease
- Respiratory failure in other pulmonary diseases
- Management of sepsis
- Respiratory and haemodynamic monitoring in acute respiratory failure
- Non-invasive and Mechanical ventilation
- Principles of critical care, diagnosis and management of complications;
- severity of illness scoring systems
- Ethical and end-of-life issues in critical care

11. Extrapulmonary manifestations of pulmonary diseases

12. Sleep-related pulmonary diseases

- Polysomnography
- Sleep apneas
- Other sleep-disordered breathing syndromes

13. Miscellaneous aspects

- Diseases of the diaphragm
- Disorders of chest wall
- Obesity-related pulmonary disorders
- Oxygen therapy
- End-of-life care
- Aerospace Medicine
- Pulmonary problems related to special environments (high altitude, diving, miners)
- Assessment of quality of life using questionnaires
- Health impacts of global warming

14. Preventive Pulmonology

- Principles of smoking cessation and smoking cessation strategies
- Cardiopulmonary rehabilitation
- Preventive aspects of pulmonary diseases
- Vaccination in pulmonary diseases

III. Surgical aspects of Pulmonary Medicine

- Pre- and post-operative evaluation and management of thoracic surgical patients
- Chest trauma/trauma related lung dysfunction
- Lung transplantation

TEACHING AND LEARNING METHODS

Postgraduate teaching programme

General principles

Acquisition of practical competencies being the keystone of PG medical education, PG training should be skills oriented. Learning in PG program should be essentially self- directed and primarily emanating from clinical and academic work. The formal sessions are merely meant to supplement this core effort.

Teaching methodology

This should include regular bedside case presentations and demonstrations, didactic lectures, seminars, journal clubs, clinical meetings, and combined conferences with allied departments. The post graduate student should be given the responsibility of managing and caring for patients in a gradual manner under supervision.

Formal teaching sessions

In addition to bedside teaching rounds, at least 5-hr of formal teaching per week are necessary. The departments may select a mix of the sessions, as given under formative assessment. Further, the student should:

- Attend accredited scientific meetings (CME, symposia, and conferences).
- Attend additional sessions on resuscitation, basic sciences, biostatistics, research methodology, teaching methodology, hospital waste management, health economics, medical ethics and legal issues related to medical practice are suggested.
- There should be a training program on Research methodology for existing faculty to build capacity to guide research.
- The postgraduate students shall be required to participate in the teaching and training programme of undergraduate students and interns.
- 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.

Log book: During the training period, the post graduate student should maintain a Log Book indicating the duration of the postings/work done in Wards, OPDs and Casualty. This should indicate the procedures assisted and performed, and the teaching sessions attended. The Log book shall be checked and assessed periodically by the faculty members imparting the training.

Thesis All MD (Pulmonary Medicine) post graduate students should carry out work on an assigned topic under the direct guidance of a recognised post graduate teacher. A written protocol of the proposed work should be submitted before the end of the first 6 months. Subsequently, the post graduate student should carry out the proposed work for at least 1 year (not inclusive of the period for submitting the protocol and writing-up the final thesis).

During the training programme, patient safety is of paramount importance; therefore, skills are to be learnt initially on the models(skill lab), later to be performed under supervision followed by performing independently.

ASSESSMENT

FORMATIVE ASSESSMENT, ie., assessment during training.

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

Postgraduate Students Appraisal From Pre/Para/Clinical Disciplines

Name of the Department/Unit :

Name of the PG Student :

Period of Training : FROM.....TO.....

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.	Patients 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										

Publication

Yes/No

Remarks*

* REMARKS: Any significant positive attributes of a postgraduate students 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 CONSULTANT

SIGNATURE OF HOD

INTERNAL ASSESSMENT

During the course of 3 years, the department will conduct 3 tests. Two of them will be annual, one at the end of first year and other at the end of second year. The third test will be a preliminary examination which may be held 3 months before the final examination. The tests may include written papers, practicals/clinicals and viva voce. Records and marks obtained in such tests will be maintained by the head of the department and will be made available to the university or NMC

SUMMATIVE ASSESSMENT, ie., assessment at the end of training.

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

Candidates will be allowed to appear for Final examination only if

- Attendance of minimum 80% in each term
- Internal assessments are satisfactory
- Thesis accepted
- Passed BCBR exam (Basic course in Biomedical Research)
- Completed 3 months of DRP (District Residency Programme)

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 Examination:

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 the examination. (minimum of 40% marks in each theory paper and not less than 50% cumulatively in all the 4 theory papers).

There shall be four theory papers:

Paper I: General pulmonary medicine and basic sciences;

Paper II: Clinical pulmonary medicine including medical emergencies;

Paper III: Clinical pulmonary medicine including critical care medicine;

Paper IV: Recent advances in pulmonary medicine, and research methodology.

All the four question Papers will have the following pattern Short answer essay questions, 10 in number, 10 marks each = Total 100 marks each paper.

The final qualifying examination should include an assessment of clinical skills in the form of case presentations and discussions. Other rules laid down by the NMC regarding M.D. examinations shall apply here as well.

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

The postgraduate students shall examine one long and two short cases.

Type of cases:

Long case 1 - 100 marks

Short cases 2 (50x2) - 100 marks

Oral/viva voce Examination

The oral examination shall be thorough and shall aim at assessing the knowledge and competence of the post graduate student on the subject, investigative procedures, therapeutic technique and other aspects of the specialty which form a part of the examination.

C. Viva Voce Examination 100 marks

1) Viva-voce examination: (80 marks)

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, histo-pathology 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: (20 marks)

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 8-10 minutes.

D. Maximum marks

Theory	Practical	Viva	Grand Total
400	200	100	700

WARD ROTATION SCHEDULE

Postings to other specialty departments and duration of postings are as under:

In the parent department of Respiratory Medicine	30 months
Department of Medicine	- 15 days
Department of Cardiology	- 15 days
Department of Radio-diagnosis	- 15 days
Department of Emergency Medicine	- 15 days
Department of Critical Care ICU	- 15 days
Department of Cardio-Thoracic Surgery	- 15 days
District Residency Programme (DRP)	- 3 months

RECOMMENDED BOOKS AND JOURNALS (latest edition)

Sr.No	Name of the Text book	Authors	Publishers
1	Crofton & Douglas Respiratory diseases	Seaton et al	Oxford
2	Pulmonary diseases & disorders	Fishman	McGraw Hill
3	Text book of Respiratory Medicine	Murray and Nodel's	Elsevier Saunders
4	Text book of Pulmonary and Critical Care Medicine	S.K.Jindal	Jaypee
5	Text book of Pulmonary Medicine	D. Behera	Jaypee
6	Pleural Diseases	R.W Light	Lippincott's Williams and Wilkins
7	Harrison's Principles of Internal Medicine	Petersdorf	McGraw Hill
8	Cecil Text book of Medicine	Wyngaarden	
9	Chest Roentgenology	Felson B	W.B Saunders,AITBS Publishers India
10	Principles of Chest X-ray Diagnosis	Simon G	Butter Worth and Jaypee Brothers
11	Clinical Tuberculosis	Rajendra Prasad	Jaypee Brothers
12	Asthma	Clarke et al	
13	Atlas of Flexible Bronchoscopy	Pallav Shah	CRC Press
14	Tuberculosis & Non Tuberculous Mycobacterial Diseases	Surendra K Sharma	Jaypee
15	Tuberculosis & Non Tuberculous Mycobacterial Infections	David L.Schlossberg	W.B.Saunders

16	Fundamentals of Sleep	Richard Berry	Elsevier
17	Lung diseases in the Tropics	OP Sharma	Marcel Dekker
18	The Normal Lung	Murray	Saunders
19	Pulmonary Function Testing	Clausen	Academic Press
20	Respiratory Physiology	J.B West	Williams & Wilkins
21	Physiology of Respiration	J.H Comroe	Yearbook Med Pub.
22	Respiratory Function in disease	Bates et al	Saunders

Clinical manuals

Huthinson's	Clinical Methods
Macleod's	Clinical Examination

JOURNALS

Thorax	Thoracic Society British Medical Association
Chest	American College of Chest Physicians
Indian Journal of Chest Diseases & Allied Science	V.P. Chest Institute, Delhi.
Indian Journal of Tuberculosis	Tuberculosis Association of India
American Journal of Respiratory and Critical Care Medicine	American Thoracic Society
European Respiratory Journal	European Respiratory Society
Clinics in Chest Medicine	Elsevier
Lung India	Indian Chest Society
Journal Of Allergy and Clinical Immunology	American Academy of Allergy, Asthma and Immunology
Journal of Clinical Sleep Medicine	American Academy of Sleep Medicine



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