



GOVERNMENT OF JAMMU & KASHMIR
SHER-I-KASHMIR INSTITUTE OF MEDICAL SCIENCES
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**Syllabus for Assistant Professor Posts of
the Department of Respiratory Medicine,
SKIMS, SOURA.**

**SYLLABUS FOR THE POST OF ASSISTANT PROFESSOR
(RESPIRATORY MEDICINE)**

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 defense 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,
10. Actinomycosis, Nocardiosis, Aspergillosis, Blastomycosis etc. (ii) Laboratory diagnostic procedures in pulmonary mycosis
11. Opportunistic infections in the immuno-ompromised individuals
12. HIV and AIDS. Virological aspects, immuno-pathogenesis, diagnosis
13. 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 broncho pulmonary 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 eosinophilias
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
4. 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

1. Aetiopathogenesis
2. Diagnostic methods
3. Differential diagnosis
4. Management of pulmonary tuberculosis; RNTCP, DOTS, and DOTS-Plus;
5. International Standards of TB Care



6. Complications in tuberculosis
7. Tuberculosis in children
8. Geriatric tuberculosis
9. Pleural and pericardial effusion and empyema
10. Mycobacteria other than tuberculosis
11. Extrapulmonary tuberculosis
12. HIV and TB; interactions of antitubercular drugs with antiretrovirals
13. Diabetes mellitus and tuberculosis
14. Management of MDR and XDR tuberculosis

2. Non-tuberculous infections of the lungs

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

B. Non-infectious Lung Diseases

3. Immunological disorders

1. Immune defence mechanisms of the lung
2. Sarcoidosis
3. Hypersensitivity pneumonitis and lung involvement
4. Eosinophilic pneumonias and tropical eosinophilia
5. Pulmonary vasculitides
6. Connective tissue diseases involving the respiratory system
7. Interstitial lung disease of other etiologies
8. Reactions of the interstitial space to injury, drugs
9. Occupational and environmental pulmonary diseases

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

1. Aspiration and inhalational (non-occupational) diseases of the lung
2. Drug induced pulmonary diseases
3. Bullous lung disease
4. Uncommon pulmonary diseases (metabolic, immunological, unknown etiology), pulmonary haemorrhagic syndromes
5. Other pulmonary diseases of unknown etiology including PLCH, LAM,
6. PAP, alveolar microlithiasis
7. Cystic fibrosis and disorders of ciliary motility
8. Obesity-related pulmonary disorders

10. Upper airways obstruction syndromes
11. Occupational lung diseases and pneumoconiosis
12. Air-pollution induced diseases, toxic lung and other inhalational injuries
13. Health hazards of smoking
14. Drug-induced lung diseases
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5. Pulmonary Circulatory disorders

1. Pulmonary hypertension and cor pulmonale
2. Pulmonary edema
3. Pulmonary thromboembolic diseases and infarction
4. Cardiac problems in a pulmonary patient and pulmonary complications produced by cardiac diseases

6. Obstructive diseases of the lungs

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

7. Tumors of the lungs

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

8. Diseases of the mediastinum

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

9. Disorders of the pleura

1. Pleural dynamics and effusions
2. Non-neoplastic and neoplastic pleural diseases
3. Pneumothorax
4. Pyothorax and broncho-pleural fistula
5. Fibrothorax

10. Critical Care Pulmonary Medicine

1. Management of emergency problems of different pulmonary diseases
2. Adult respiratory distress syndrome
3. Respiratory failure in the patient with obstructive airway disease
4. Respiratory failure in other pulmonary diseases
5. Management of sepsis
6. Respiratory and haemodynamic monitoring in acute respiratory failure
7. Non-invasive and Mechanical ventilation
8. Principles of critical care, diagnosis and management of complications; severity of illness scoring systems



9. Ethical and end-of-life issues in critical care

11. Extra-pulmonary manifestations of pulmonary diseases

12. Sleep-related pulmonary diseases

- 1) Polysomnography
- 2) Sleep apneas
- 3) Other sleep-disordered breathing syndromes

13. Miscellaneous aspects

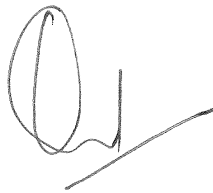
- 1) Diseases of the diaphragm
- 2) Disorders of chest wall
- 3) Obesity-related pulmonary disorders
- 4) Oxygen therapy
- 5) End-of-life care
- 6) Aerospace Medicine
- 7) Pulmonary problems related to special environments (high altitude, diving, miners)
- 8) Assessment of quality of life using questionnaires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

14. Preventive Pulmonology

- 1) Principles of smoking cessation and smoking cessation strategies
- 2) Cardiopulmonary rehabilitation
- 3) Preventive aspects of pulmonary diseases
- 4) Vaccination in pulmonary diseases

III. Surgical aspects of Pulmonary Medicine

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

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