

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY
No. 69, ANNA SALAI, GUINDY, CHENNAI – 600 032.

M.D. / M.S.

POST GRADUATE DEGREE COURSES



SYLLABUS AND CURRICULUM

2021 - 2022

M.D. RESPIRATORY MEDICINE

THE TAMIL NADU Dr. M.G.R MEDICAL UNIVERSITY, CHENNAI

M.D. RESPIRATORY MEDICINE

1. GOAL

To train post graduate medical students in the specialty of respiratory medicine in different medical institutions with the common broad based curriculum.

To train post graduate in respiratory medicine to undergo training in research methodology so as to make them understand ways and means to take their dissertation and clinical research in a more scientific manner.

To enable them to become efficient teachers to undergraduates, para- medical, Nursing Post graduate students in the speciality of respiratory medicine.

To sensitize them to take part in National programme and community intervention including respiratory medicine, so that they are sensitive to the needs of the society.

To Train them to conduct interactive meeting with public

To instill confidence in them in problem solving approach while managing various clinical scenario

To train them in holistic approach in preventive, curative and re-habilitative aspects of respiratory medicine.

2. OBJECTIVES:

A) Knowledge

The students are expected to get trained in basics of anatomy, Embryology, physiology, Bio-Chemistry, Bio-Ethics, Micro-Biology, Pathology, Pharmacology related to respiratory medicine.

To make them understand the patho physiology of various respiratory ailments.

They should be adequately trained to recognize and diagnose various respiratory ailments and epidemics involving respiratory pathogens.

To train them to handle various respiratory emergencies independently with available recourses.

To train them in research work publication, and presentation of scientific papers.

To train them in bio-statistics.

Recognise – National Priorities and play an important role in implementation of National Health Programmes including national Tuberculosis Elimination Programme.

B) Attitude

To train them in communicative skills to interact with patients and their relatives with their colleagues so as to make them responsible physicians.

To instill inter-disciplinary approach among them so as to make them capable to interaction with other speciality departments, Nursing and para-medical personnel

To instill them the concept of team work in their day to day activities to deliver better patient care.

C) Skills

Able to perform and interpret procedures like Thoracostomy, Polysomnography, Spirometry, Bronchoscopy , USG chest, DLCO, Medical Thoracoscopy etc.,

To be trained in ventilatory assistance and manage critically ill-patients in IRCU.

To be trained in re-habilitative medicine and palliative care in respiratory medicine.

3. COMPONENTS OF THE POSTGRADUATE CURRICULUM

• THEORETICAL KNOWLEDGE

a) Basic sciences:

To train them in basic sciences pertaining to respiratory medicine Knowledge about clinical respiratory medicine.

To train them in understating Co-morbid conditions involving other specialties like cardiology, Nephrology , Neurology etc.,

• PRACTICAL AND CLINICAL SKILLS

Elaborate history taking and clinical examination To train them in diagnostic procedures like

- Diagnostic Pleurocentesis
- Medical Thoracoscopy
- Performing and interpreting ABGA
- Performing and interpretation of Spiro-metry
- Performing and interpretation of DLCO and sleep study
- Training in USG of pleural spaces
- Intubation and NIV

• WRITING THESIS/ RESEARCH ARTICLES

To be trained in research methodology operational research and clinical research during first academic year

To be trained in gathering and compiling data analysis, designing a research protocol and executing research work

To be trained in the critical appraisal of journal articles

ATTITUDES INCLUDING COMMUNICATION SKILLS

To be trained in communication skills in case presentation, clinic- pathological discussion, seminars and small conferences

The post graduates should be trained in effective communication skills to deal with the colleagues, patients, patients relatives and with the general public

To instill empathy in patient care and delivery of health services.

TRAINING IN RESEARCH METHODOLOGY, MEDICAL ETHICS, BIO-ETHICS AND MEDICO LEGAL ASPECTS

Students should compulsorily attend the research Methodology workshop conducted by the University within first six months of the M.D course.

Students are encouraged to attend workshops/CME's on Bioethics conducted by the University and other reputed Institutions.

Medical ethics, moral and legal issues, medical audit are part and parcel of the curriculum and syllabus.

The students should be trained in bio-ethics so that they are aware of the human rights, human dignity and patients rights, to interact with medico legal issues involving respiratory medicine and practice safe health measures, to be trained in computer application to search medical literature with medicalevidence from internet

4. Theory syllabus

Anatomy

- ☐ Clinical and applied anatomy of the respiratory tract
- ☐ Histology of the respiratory system
- ☐ Embryology of the lung
- ☐ Ultrastructure details including electron microscopy of the lung
- ☐ Radiographic anatomy of the thorax

Physiology

- ☐ Lung physiology
 - Ventilation
 - Lung mechanics
 - Blood gas transfer
 - Control of respiration
 - Diffusion and compliance
 - Airway resistance
 - Body plethysmography
- ☐ Physiology of sleep medicine
- ☐ High altitude physiology
- ☐ Respiratory reflexes
- ☐ Non respiratory functions of the lung

Pathology

- ☐ Pathology of various respiratory ailments
- ☐ Analysis of samples for cytology, biopsy, immunohistochemistry etc.

Microbiology

- ☐ Bacterial respiratory pathogens
- ☐ Viral pathogens
- ☐ Fungal Pathogens
- ☐ HIV and AIDS, Virological aspects immunopathogenesis and diagnosis
- ☐ Mycobacterium tuberculosis
- ☐ Atypical mycobacteria
- ☐ Applied respiratory clinical microbiology
- ☐ Allergy and Hypersensitivity reactions
- ☐ Staining procedures like Ziehl-Neelsen, Auramine fluorescence staining, LED microscopy
- ☐ Advanced molecular diagnostics
- ☐ Culture methods, radioimmunoassay
- ☐ Serological evaluations
- ☐ Infection control practices and air-borne infection control

Pharmacology

- ☐ Drugs used in respiratory medicine
- ☐ Pharmacovigilance and reporting of ADR
- ☐ Newer drugs
- ☐ Cancer chemotherapy agents for lung malignancy

Biochemistry

- ☐ Respiratory acidosis, alkalosis,
- ☐ Acid base balance
- ☐ Pulmonary surfactants

Respiratory diseases

- ☐ Clinical approach to signs and symptoms in respiratory medicine
- ☐ Diagnostic procedures
- ☐ Congenital respiratory abnormalities
- ☐ Infectious diseases of respiratory system
- ☐ Occupational lung diseases
- ☐ Immunological lung disorders
- ☐ Airway diseases
- ☐ Disorders of pulmonary circulation
- ☐ Sleep disordered breathing
- ☐ Lung malignancy
- ☐ Mediastinal diseases
- ☐ Disorders of pleura
- ☐ Acute and Chronic respiratory failure
- ☐ Critical care of lung conditions including ECMO
- ☐ Management of bio-terrorism and respiratory epidemics
- ☐ Surgical management of respiratory diseases
- ☐ Pulmonary rehabilitation and palliative care
- ☐ Vaccination against lung infections
- ☐ Geriatric lung care
- ☐ Smoking cessation, prevention of environmental pollution
- ☐ National programs and policies
- ☐ Lung transplantation protocols
- ☐ Bio-ethics
- ☐ Tuberculosis and Non Tuberculosis infection and management according to national guidelines NTEP.

5. Teaching learning methods (including clinical study) Following teaching learning methods are recommended

- ☐ Lectures
- ☐ Case based discussions
- ☐ Bed side clinics
- ☐ Teaching on ward rounds
- ☐ Seminars
- ☐ Journal clubs
- ☐ Problem based learning
- ☐ Training in medical/death audits
- ☐ Health economics
- ☐ Telemedicine wherever available

6. Structured training program MD respiratory medicine 3 years

Respiratory medicine	6 months
General medicine	1 month
Anesthesia/ Surgical ICU	1 month
IMCU	15 days
Radiology	15 days
Thoracic surgery	15 days
Research Methodology	15 days
Pediatrics	15 days
Medical oncology	15 days
Radiotherapy	15 days
HIV medicine/infectious diseases	15 days

2nd year

Respiratory medicine	9 months
IMCU	15 days
IRCU	2 months
General medicine	1 month
Social and preventive medicine	15 days

3rd year

Respiratory medicine	10 months
IMCU/IRCU	1 month
Radiology	15 days
Physical medicine and rehabilitation/Palliative care	15 days

During IInd year, the Students are encouraged to undergo special postings for learning new advanced techniques / procedure / skills in institutions of higher repute where the requisite facilities are available without affecting the duties of the parent department.

7. Evaluation of the candidates in both theory and practical aspects will help the candidate in improvement of his/her knowledge, skills and attitude.

8. COMPETENCY ASSESSMENT:

- OVERALL:

a) Communication / commitment / Contribution / Compassion towards patients and Innovation	() ()	- 5 Marks
b) Implementation of newly learnt techniques/skills	()	
☐ Number of cases presented in Clinical Meetings/ Journal clubs/seminars		- 5 marks
☐ Number of Posters/Papers presented in Conferences/ Publications and Research Projects		- 5 marks
☐ No. of Medals / Certificates won in the conference / Quiz competitions and other academic meetings with details.		- 5 marks
Total		20 Marks

PG CLINICAL COURSES

VIVA including Competency Assessment	- 80 Marks (60 + 20)
Log Book	- 20 marks

ASSESSMENT SCHEDULE IS AS FOLLOWS

Year of study	Period				Total Max.20 marks
I year	Upto Dec	10 marks	Upto June	10 marks	20 Marks
II year	Upto Dec	10 marks	Upto June	10 marks	20 Marks
III year	Upto Oct	10 marks	Upto Feb	10 marks	20 Marks
	AVERAGE				20 Marks

9. Dissertation and University Journal of Medical Sciences:

As per the 49th SAB Resolution under Point No. 2 and in the 52nd SAB it was reiterated regarding the topic for dissertation

The topic for the dissertation should be registered and sent to the University after Ethics Committee approval before 31st of December of the first Post Graduate Year. Only one change of topic with proper justification from the Head of the Department is permitted before 31st March of the first Post Graduate Year. The change of dissertation title will not be permitted after 31st March of the First Post Graduate Year. This modification in regulation will be scrupulously followed from the academic year 2015-16 admission onwards.

As per Medical Council of India Post Graduate Medical Education Regulations 2000 (amended upto 10th August 2016) clause 13.9 A Postgraduate student of a Postgraduate degree Course in broad specialties/Super Specialties 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.

As per MCI Clause 14 (4)(a), thesis shall be submitted atleast 6 Months before the Theory and Clinical/Practical Examination.

A candidate shall be allowed to appear for the Theory and Practical/Clinical Examination only after the acceptance of the Thesis by the Examiners.

The periodical evaluation of dissertation/log book should be done by the guide / HOD once in every six months. The HOD should ensure about the submission of dissertation within the stipulated time.

Regarding submission of articles to the University Journal of Medical Sciences for all the PG Degree/Diploma courses, it is mandatory that the students have to submit at-least one research paper. Case Reports are not considered as Research Paper

10. THEORY EXAMS

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.

Question paper Pattern:

Paper I :	Write notes on	
i.	Anatomy	4 x 5 = 20
ii.	Physiology	4 x 5 = 20
iii.	Biochemistry	3 x 5 = 15
iv.	Pharmacology	3 x 5 = 15
v.	Pathology	3 x 5 = 15
vi.	Microbiology	3 x 5 = 15

Total = 100 marks

Paper II, III & IV :		
i.	Elaborate on :	2 x 15 = 30
ii.	Write notes on	10 x 7 = 70
Total =		100 marks

11. Practical examination pattern

Long case (1 X 45 min) (1 X 80 marks)	80 marks
Short cases (2 X 15) (2 X 35 marks each)	70 marks
Ward rounds/Case discussion (3 X 5min) (3 X 10 marks each)	30 marks
OSCE 4 stations 5 min each (4 X 5 marks)	20 marks
TOTAL	200 marks
Viva Voce	80 marks
Log book	20 marks
Aggregate (clinical + viva) Total	300 marks
Minimum required for pass (50%)	150 marks

12. Log book

The Post Graduates students shall maintain a record (Log) book of the work carried out by them and the training Programme undergone during the period of training.

Periodic review of Log book and Dissertation have to be done in the Department by guide/HOD once in every 6 months.

13. Viva

Unstructured Viva -80 marks
VIVA including Competency Assessment

- 80 Marks (60 + 20)

14 OSCE

4 stations with varying combinations which should include evidence based and problem based solutions, PFT, ABG, Clinical problem solving, Chest X-ray, CT chest, Specimens/slides, Sleep study report, Case scenarios, drugs, Devices/instruments.

15 Reference books

1. AP Fishman Pulmonary Diseases and Disorders IInd Edition Magnabull Book Company, New York.
2. Hand Book of Physiology, Respiratory System Volume-1, 'American Physiology Society 1985
3. Baits DV Maclon PT Dchristee Respiratory Function and Diseases, 11th Edition, Sandoz & Company, Philadelphia
4. Hand Book of Physiology, Respiratory System Volume III American Physiological Society 1986
5. Regulation of Breathing Part-and H M.Decker & Co. 1981
6. Sleep and Breathing:-- M.Decker & Co. 1984
7. Hand Book of Physiology Respiratory System Volume IV, American Physiological Society 1987
8. Pathology for Oxygen Hardward University, U.S.A. 1984
9. Clinical Examination Testing IIIrd Edition, Sandoz, Philadelphia
10. Physiology and Medicine of Diving IIIrd Edition Best Book Binder, California, 1982
11. Hand Book of Physiology, Respiratory System Volume II. American Physiological Society.
12. Acid Base – Little Brown & Co. Frazer and Boston, 1983
13. Frazer and Perry, Diagnosis of Diseases of ChestIInd Edition, W.B. Sandoz, Philadelphia.
14. Clinical Epidamology – A Basic Science for Clinical Medicine, Little Brown & Co., Toronto, 1985
15. Morphogenesis of Lung Cancer. C.R.C. Press Florida, Vol. I & Vol. II, 1983

16. Principles of Chest X-Ray Diagnosis C.Simon
Ampletender Gentry Crafts, 1971
17. Pathology of the Lung.
Spencer, Oxford Personal Press, 1977
18. Computer Tomography of Thorax
Roman Press – 1984
19. Advanced Imaging Techniques
Volume II, Claredel Press, California – 1983
20. Text Book of Work Physiology
Niagra Hills, New York, 1977
21. The Eoesonophil in Health and Deseases
Grunec and Streton, New York -1980
22. Intestinal Lung Diseases.
Bercker*-Philadelphia-1988
23. Respiratory Diseases – by Crafton & Dulgus –Blackwell
24. The Lung Structure and Function.
G.E. Costs - Blackwell
25. Work related Lung Disorders., G.E. Costs.
26. O.P.Sharma – Text book on Tuberculosis
27. S.K.Jindal – Pulmonary medicine
28. Shankar – Pulmonary medicine
29. Light – Pleural disease
30. Rom and Garay – Tuberculosis
31. Schollberg – Tuberculosis
32. Toman – Case finding and Chemotherapy in tuberculosis
33. Murray and Nada – Textbook of respiratory diseases
34. Thomas Shields – Essentials of thoracic surgery
35. Webb – HRCT chest
36. Armstrong – Pulmonary radiology
37. Harrison's Principles of Internal Medicine
38. Cecil Text book of Medicine
39. Crofton & Douglas Respiratory Diseases
40. Text book on Pulmonary Disease
41. Asthma
42. Bronchoscopy
43. Tuberculosis by SK Sharma
44. Lung diseases in the tropics – ed. OP Sharma (Marcel Dekker)
45. The Normal Lung by Murray (Saunders)
46. Pulmonary Function Testing by Clausen (Academic Press)
47. Respiratory Physiology by J.B. West (Williams & Wilkins)
48. Physiology of Respiration by J.H. Comroe
49. Respiratory function in disease by Bates et al

16. JOURNALS

1. Lung India
2. Indian Journal of Chest Diseases and Allied Sciences
3. Indian Journal of Tuberculosis
4. Thorax
5. Bulletin of IUAT & LD
6. Chest
7. American Review of Respiratory Diseases
8. European Journals of Respiratory Diseases
9. Journals of Infectious Diseases
10. Lancet
11. Journals of Indian Medical Association
12. New England Journal of Medicine
13. Journal of Association of Physicians of India
14. Nature
15. Science
16. Cancer
17. Cancer Research
18. Journal of Thoracic and Cardiovascular Surgery.
19. Chest
20. International Journal of tuberculosis and lung disease
21. British medical journal
22. Thorax
23. Clinics in Chest medicine
24. American journal of respiratory and critical care medicine
25. Critical care medicine.
26. Sleep medicine
27. European respiratory journal
