

CHETTINAD ACADEMY OF RESEARCH AND EDUCATION

(DEEMED TO BE UNIVERSITY UNDER SECTION 3 OF THE UGC ACT, 1956)



FACULTY OF MEDICINE
M.D. RESPIRATORY MEDICINE
REGULATIONS & SYLLABUS

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**CHETTINAD ACADEMY OF RESEARCH AND EDUCATION
REGULATIONS FOR M.D. & M.S. CLINICAL PROGRAMS**

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CHETTINAD ACADEMY OF RESEARCH AND EDUCATION

Regulations for M.D./M.S. Clinical Courses

1. INTRODUCTION:

M.D. / M.S. Clinical course is a three year post graduate program under the Faculty of Medicine for students with an Under Graduate Degree in Medicine. This program is taught course that covers relevant topics and a research project in the area of specialization. This program shall be competence based and learning shall be essentially autonomous and self directed and supplemented with practical and laboratory work. The curriculum shall have modular approach to learning. The research component is through original exploration and experiments culminating in the research project. This program shall impart advanced theoretical and practical aspects of subjects previously studied in a more general manner at the undergraduate level.

These courses are aimed at imparting higher-level training to qualified under graduate medical students in various branches of M.D./M.S. Clinical subjects and to involve the learning experiments to the needs of community.

In exercise of the powers conferred under sub rule (a) and (g) of Rule 8 (b) of Memorandum of Association and Clause 2.1, Chapter III of Bye-laws of Chettinad Academy of Research and Education, the Academic Council hereby makes the following regulations:

2. SHORT TITLE AND COMMENCEMENT:

These Regulations shall be called the "Regulations for M.D /M.S. Clinical Courses of Chettinad Academy of Research and Education. These regulations shall come into force from the academic year 2012-2013. These regulations are subject to modifications as may be approved by the Academic Council from time to time.

3. GOAL:

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

- i) 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.
- ii) who shall have mastered most of the competencies, pertaining to the specialty, that are required to be practiced at the secondary and the tertiary levels of the health care delivery system.
- iii) who shall be aware of the contemporary advance and developments in the discipline concerned.
- iv) who shall have acquired a spirit of scientific inquiry and is oriented to the principals of research methodology and epidemiology and
- v) who shall have acquired the basic skills in teaching of the medical and paramedical professionals.

4. AIMS AND OBJECTIVES:

At the end of the Post Graduate training in the discipline concerned the student shall be able to:

- i) Recognize the importance to the concerned speciality in the context of the health needs of the community and the national priorities in the health section.
- ii) Practice the speciality concerned ethically and in step to the principles of primary health care.
- iii) Demonstrate sufficient understanding of the basic sciences relevant to the concerned speciality.
- iv) Identify social, economic, environmental, biological and emotional determinants of health in a given case, and take them into account while planning therapeutic, rehabilitating, preventive and primitive measures/ strategies.
- v) Diagnose and manage majority of the conditions in the speciality concerned on the basis of clinical assessment, and appropriately selected and conducted investigations.
- vi) Plan and advise measures for the prevention and rehabilitation of patients suffering from disease and disability related to the speciality.
- vii) Demonstrate skills in documentation of individual case details as well as morbidity and mortality rate relevant to the assigned situation.
- viii) Demonstrate empathy and human approach towards patients and their families and exhibit interpersonal behavior in accordance with the societal norms and expectations.
- ix) Play the assigned role in the implementation of National Health Programme effectively and responsibly.
- x) Organize and supervise the chosen/assigned health care services demonstrating adequate managerial skills in the clinic/hospital or the field situation.
- xi) Develop skills as a self-directed learner, recognize continuing education needs: select and use appropriate learning resources.
- xii) Demonstrate competence in basic concepts of Research Methodology and epidemiology, and be able to critically analyze relevant published research literature.
- xiii) Develop skills in using educational methods and techniques as applicable to the teaching of Medical/ Nursing students, General Physicians and Paramedical Health Workers.
- xiv) Function as an effective leader of a health team engaged in health care, research or training

5. COMPONENTS OF THE POSTGRADUATE CURRICULUM:

The major components of the Postgraduate curriculum shall be:

- Theoretical knowledge

- Practical and clinical skills
- Writing Thesis/Research articles
- Attitudes including communication skills.
- Training in research methodology, Medical Ethics and Medicolegal aspects.

6. NOMENCLATURE OF POSTGRADUATE COURSES:

The nomenclature of Post Graduate Degree should be as laid down in the Post Graduate Medical Education Regulations prescribed by the Medical Council of India.

7. ELIGIBILITY FOR ADMISSION:

Every student, selected for admission to a post graduate medical course in Chettinad University on acquiring M.B.B.S degree or an equivalent qualification thereto shall have obtained permanent registration with the Medical Council of India, or any of the State Medical Council(s) or shall obtain the same within a period of one month from the date of his/her admission, failing which his/her admission shall stand cancelled.

Provided that in the case of a foreign national, the Medical Council of India may, on payment of the prescribed fee for registration, grant temporary registration, for the duration of the post graduate course limited to the medical college/institution to which the candidate is admitted for the time being exclusively for pursuing post graduate studies.

Provided further the temporary registration to such foreign national shall be subject to the condition that such person is duly registered with appropriate registering authority in his own country wherefrom he has obtained his basic medical qualification and is duly recognized by the corresponding Medical Council or concerned authority.

8. RECOGNITION FEE AND ELIGIBILITY CERTIFICATE:

Candidates who have passed the M.B.B.S Degree Examination other than that conducted by Chettinad Academy of Research and Education shall obtain Eligibility Certificate from this University at the time of admission and also remit recognition fee as prescribed.

9. REGISTRATION:

A candidate admitted to the Post Graduate Course shall register with the University by submitting the prescribed application form for registration, duly filled in along with the prescribed fee, through the Head of the Institution.

10. PERIOD OF TRAINING /DURATION OF THE COURSE:

The duration of certified study and training for the M.D. / M.S. Post Graduate Clinical Courses shall be three completed years including the period of examination.

Provided that in the case of students possessing a recognised two year postgraduate diploma course in the same subject, the period of training, including the period of examination, shall be two years.

11. COMMENCEMENT OF THE COURSE:

The course shall ordinarily commence from 2nd May of the academic year.

12. CUT OFF DATES FOR ADMISSION:

Candidates admitted up to 31st May of the Academic year shall be registered for the same Academic Year but shall be eligible to take up the final examination along with others students admitted prior to their admission. There shall be no admission of students in respect of any academic session beyond 31st May for postgraduate courses under any circumstances. The University shall not register any student admitted beyond the said date.

13. SYLLABUS:

The Syllabus for the course shall be as specified in the annexure to these Regulations.

14. MEDIUM OF INSTRUCTION:

English shall be the medium of instruction for all the subjects of study and for examination.

***15. WORKING DAYS / ATTENDANCE**

All the candidates joining the Post Graduate training program shall work as "Full Time Residents" during the period of training and shall attend not less than 85% (Eighty Five percent) of the imparted training during each academic year including assignments, assessed full time responsibilities and participation in all facets of the educational process as per MCI norms. 85% attendance is compulsory for all the Post Graduate students for every academic year. The Attendance details may be submitted to the Controller of Examinations at the end of every academic year. The student should also be intimated quarterly regarding the lack of attendance.

***16. CONDONATION FOR LACK OF ATTENDANCE:**

The discretionary power of condonation of shortage of attendance to appear for University

Examination rests with the Vice Chancellor.

Lack of attendance can be condoned up to a maximum of 5% of the minimum attendance required

in the following exceptional circumstances:

- (i) Any illness/ accident (for which Medical certificate from a registered medical practitioner must be produced)
- (ii) Any unforeseen tragedy in the family (should produce the letter from the parent/guardian)
- (iii) Participation in NCC/NSS and other co-curricular activities representing the Institution / University. (Certificate from competent authority is required)

For any of the above reasons, request shall be made by the candidate with prescribed fees to the Controller of Examination through proper channel, ten days prior to the

commencement of the theory examination. Based on the recommendation of the Head of the Institution, the Controller of Examination shall obtain the approval of the Vice Chancellor for admission of the candidate to the University Examination.

***SI.No.15 & 16 Amended vide XVIII meeting of Academic Council dated 15.04.2014 and to be**

replaced as detailed below:

In the existing regulations for M.D. Pre – Para and M.D./M.S. Clinical courses, it has been stipulated that 85% attendance is compulsory for all the Post graduate students for every academic year. This has been modified to 80% attendance in keeping with Statutory Body norms. There shall be no condonation for attendance. The attendance criteria will hence read as follow as in MCI regulations.

"All the candidates joining the Post Graduate training programme shall work as 'Full Time Residents' during the period of training and shall attend not less than 80%(Eighty percent) of the imparted training during each academic year including assignments, assessed full time responsibilities and participation in all facets of the educational process."

The Attendance details shall be submitted to the Controller of Examinations at the end of each academic year. The student should also be intimated quarterly regarding the lack of attendance.

16 (a) STIPEND AND GRANT OF LEAVE

The Post Graduate students undergoing Post Graduate Degree / Diploma/Super-Specialty course shall be paid stipend on par with the stipend being paid to the Post Graduate students of State Government Medical Institutions / Central Government Medical Institutions, in the State / Union Territory where the institution is located. Similarly, the matter of grant of leave to Post Graduate students shall be regulated as per the respective State Government rules.

17. MIGRATION / TRANSFER OF CANDIDATES:

Under no circumstances, Migration/transfer of student undergoing any Post Graduate degree course shall be permitted by the University/Authority

18.TRAINING PROGRAM:

The training given with due care to the Post Graduate students in the recognised institutions for the award of various Post Graduate medical degrees / super speciality degrees shall determine the expertise of the specialist and / or medical teachers produced as a result of the educational program during the period of stay in the institution.

The Post Graduate students of the institutions which are located in various States / Union Territories shall be paid remuneration at par with the remuneration being paid to the Post

Graduate students of State Government medical institutions / Central Government Medical Institutions, in the State/Union Territory in which the institution is located. Similar procedure shall be followed in the matter of grant of leave to Post Graduate students.

- (a) Every institution undertaking Post Graduate training programme shall set up an Academic cell or a curriculum committee, under the chairmanship of a senior faculty member, which shall work out the details of the training programme in each speciality in consultation with other department faculty staff and also coordinate and monitor the implementation of these training Programmes.
- (b) The training programmes shall be updated as and when required. The structured training programme shall be written up and strictly followed, to enable the examiners to determine the training undergone by the candidates and the Medical Council of India inspectors to assess the same at the time of inspection.

During the training for PG Degree Courses to be awarded in clinical disciplines, there shall be proper training in basic medical sciences related to the disciplines concerned; during the training for the degree to be awarded in basic medical sciences, there shall be training in applied aspects of the subject; and there shall be training in allied subjects related to the disciplines concerned. In all Post Graduate training programmes, both clinical and basic medical sciences, emphasis is to be laid on preventive and social aspects and emergency care facilities for autopsies, biopsies, cytopsies, endoscopic and imaging etc. also be made available for training purposes. The Post Graduate students shall be required to participate in the teaching and training programme of undergraduate students and interns.

Training in Medical Audit, Management, Health Economics, Health Information System, basics of statistics, exposure to human behaviour studies, knowledge of pharmaco – economics and introduction to non- linear mathematics shall be imparted to the Post Graduate students.

Implementation of the training programmes for the award of various Post Graduate Degree course shall include the following:

Basic Medical Sciences

- (i) Lectures, Seminars, Journal Clubs, Group Discussions, Participation in laboratory and experimental work, and involvement in research studies in the concerned speciality and exposure to the applied aspects of the subject relevant to clinical specialities.

Clinical disciplines

- (i) In service training, with the students being given graded responsibility in the management and treatment of patients entrusted to their care; participation in Seminars, Journal clubs, Group Discussions, Clinical Meetings, Grand rounds, and Clinico - Pathological Conferences; practical training in Diagnosis and medical and Surgical treatment; training in the Basic Medical Sciences, as well as in allied clinical specialities.

The training program shall be on the same pattern as for M.D. / M.S. in clinical disciplines; practical training including advanced Diagnostic, Therapeutic and Laboratory techniques, relevant to the subject of specialization.

The Academic Council in its XV meeting held on 08.05.2013 resolved to approve the following Curriculum Committee's recommendations.

- ❖ The members of Post Graduate Curriculum committee recommended that M.D/M.S. specialty Post Graduates can be posted to other department, so that it may give the Post Graduate an integrated approach.

MD PG Speciality	Departments to which they may be posted
Anaesthesia	Medicine, Obsterics and Gynaec
Dermatology	Medicine, Pulmonology
Pulmonology	Medicine, Cardiology, Cardio thoracic surgery
Obsterics and Gynaec	Medicine, Neonatology, Oncology
Orthopaedics	General Surgery
ENT	General Surgery
Ophthalmology	General Surgery, Medicine

19.MAINTENANCE OF LOG BOOK

- a) Every Post Graduate student shall maintain a record (Log) book containing skills, the candidate has acquired during the training period certified by the various heads of department where the candidate has undergone training including outside the institution.
- b) The students shall maintain a Record Book (Log Book) of the work carried out by them & training program undergone during the period of training including details of procedures carried out independently or assisted by the candidate. The log book will be checked by the faculty members imparting the training.
- c) At the end of the course, the candidate should summarise the contents and get the record (Log) book certified by the Head of the Department.
- d) The record (Log) book should be submitted at the time of practical examination for the scrutiny of the Board of Examiners.
- e) It would be the constant endeavour of the faculty to develop desirable attitudes in the PG trainees during the course by personal examples, interaction and group discussion. Constant watch will be maintained during their work in the wards to ensure that this objective is being met. Although there will be no formal evaluation of attitude, some aspects of this domain would be covered during the formative

evaluation as noted below for continued internal assessment. Formative evaluation will be carried out over following activities of the P.G. resident.

- i)Ward work
- ii)Case presentation
- iii)P.G.Lecture
- iv)Journal club
- v)General assessment of affective function attitude by medical & paramedical staff;
- vi)Internal Assessment

Candidates can appear for theory examination only after being certified on the basis of Internal assessment.

20.THESIS / DISSERTATION AND EVALUATION

- a) All Candidates admitted to undergo Post Graduate Degree course shall be assigned a topic for dissertation / thesis by the Head of the concerned unit and the title of the topic assigned to the candidates be intimated to the Controller of Examination of the University by the Head of the Department through the Head of the Institution before end of the First year.
- b) The dissertation / thesis shall be a bound volume of minimum 50 pages and not exceeding 75 pages of typed matter (double line spacing and on one side only) excluding certification, acknowledgements, annexure and bibliography.
- c) Four copies of dissertation shall be submitted six months prior to the commencement of the examination on the prescribed date to the controller of examination of the University.
- d) Two copies are to be submitted as an electronic version of the entire dissertation in a standard C.D. format mentioning the details and technicalities used in the C.D. format.
- e) The concerned Professors / Readers are to supervise and to see that the dissertation are done properly utilising the clinical materials of their own department / institution. The students must learn the design and interpretation of research studies, responsible use of informed consent and research methodology and interpretation of data and statistical analysis. They should seek the help of qualified staff members in the conduct of research. They must learn to use library and the computer-based research. This training will help them to develop skills in planning, designing and conduct of research studies.
- f) All candidates on admission will be allotted one of the department faculties who have fulfilled the requirement to be guides for purposes of guiding Dissertation/thesis. The topic for dissertation shall be finalized and discussed in the departmental faculty meeting and allotted to the individual candidates before the completion of 3 months

after admission. The purpose of dissertation is to develop in the candidate the ability to perform an independent study keeping the principles and research methodology in mind. The candidate will therefore work on the prospective problem either within the department or in collaboration with other departments. There will be continuous monitoring of the dissertation work by the guides and co-guide and by the other department staff throughout the course. The candidate will present the progress of the dissertation to the faculty on the completion of 1 ½ years for monitoring and feedback. The completed dissertation should be submitted not later than 6 months before final examination.

- g) The theory examinations shall be held sufficiently earlier than the Clinical and Practical examination, so that the answer books can be assessed and evaluated before the start of the Clinical/Practical and Oral examination.
- h) 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. A candidate shall be allowed to appear for Theory and Practical/Clinical examination only after the acceptance of thesis by the examiners. The thesis shall be evaluated under the following heading:
 - 1) Approved
 - 2) Not approved

In all cases the approval shall be given before 3 months of the date of appearing for the examination and this will be essential before the candidate is allowed to appear for the written examination.

21. SCHEDULE OF EXAMINATIONS:

The examination for M.D./ MS, shall be held at the end of 3rd academic year. An academic term shall mean six month's training period."

22. *SCHEME OF EXAMINATIONS:

Post Graduate Examinations shall consist of Dissertation/Thesis, Written Paper (Theory), Practical/Clinical and Viva voce.

The examinations shall be organised on the basis of "Marking system" to evaluate and to certify candidate's level of knowledge, skill and competence at the end of the training.

- a. Dissertation/Thesis:** Every candidate shall carry out and submit a Dissertation/Thesis as explained and approval of Dissertation/Thesis shall be a precondition for a candidate to appear for the final year examination.
- b.** A postgraduate student of a postgraduate degree course 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.

- c. Theory:** A Written Examination shall consist of four theory papers each of three hours duration. Each paper carries 100 marks (Total 400 marks). Out of these one shall be of Basic Medical Sciences and one shall be of Recent advances. The theory examinations shall be held well in advance than the Clinical and Practical examination, so that the answer books can be assessed and evaluated before the commencement of the Clinical/Practical and Oral examination.
- d. Clinical Examination:** Clinical examination for the subjects in Clinical sciences shall be conducted to test the knowledge and competence of the candidates for undertaking independent work as a specialist/Teacher, for which candidates shall examine a minimum one long case and two short cases.
- e. Oral Examination:** The Oral examination shall be thorough and shall aim at assessing the candidate knowledge and competence about the subject, investigative procedures, therapeutic technique and other aspects of the specialty, which form a part of the examination.

THEORY	
No. of Theory Papers	4
Marks for each Theory Paper	*100
Total marks for Theory Paper	400
Passing Minimum for Theory	200/400
Total Marks for CLINICAL	300
Passing Minimum for Clinical	150/300
Viva voce	100
Passing minimum for Clinical including Viva voce	200/400

(i) if any candidate fails even under one head, he/she has to re-appear for entire examination.

(ii) Theory paper consist of 2 essay questions of 25 marks each (2 X 25 = 50) & 5 short notes of 10 marks each (5 X 10 = 50). Total =100 marks each.

Sl.No.22 (ii) Amended vide XVIII meeting of Academic Council dated 15.04.2014 and to be replaced as detailed below:-

Resolved to approve 2 Essay Questions (2 x 20 marks) and 10 short notes (10 x 6 marks) for all post graduate medical / broad and higher speciality courses which will take effect for the students appearing for first time examination from March 2015 .

Sl.No.22(ii) Amended in XX Academic Council dated 25.03.2015.
Resolved to approve 2 essays (2 x 20 marks) and 6 short notes (6 x 10 marks) for theory paper in all M. D/ M.S. courses by the Academic Council in its XX meeting held on 25.03.2015.

***Resolved to approve that an examinee should obtain minimum 40% marks in each theory paper and not less than 50% marks cumulatively in all the four papers in P.G. degree examination to be cleared as passed which will be implemented prospectively. (Academic Council in its XX meeting held on 25.03.2015).**

23. EXAMINERS:

All the Post Graduate Examiners shall be recognized Post Graduate Teachers holding recognized post graduate qualification in the subject concerned. For all Post Graduate Examinations, the Minimum number of examiners shall be Four, out of which at least two(50%) shall be external examiners who shall be invited from other recognized universities from outside the state / outside university. The remaining two will be internal examiners.

The qualification and teaching experience for appointment of examiner shall be as detailed below and by the guidelines of Medical Council of India issued from time to time.

No person shall be appointed as an internal examiner in any subject unless he/she has three years experience as recognized PG teacher in the concerned subject. For external examiners, he/she should have minimum six years of experience as recognized PG teacher in the concerned subject'. "An examiner shall ordinarily be appointed for not more than two consecutive terms"

- i. Under exceptional circumstances, examinations may be held with 3 (three) examiners provided two of them are external and Medical Council of India is intimated for the justification of such action prior to publication of result for approval. Under no circumstances, result shall be published in such cases without the approval of Medical Council of India.

24. MAXIMUM NUMBER OF CANDIDATES:

The maximum number of candidates to be examined in clinical/practical and oral on any day shall not exceed eight for M.D./M.S. Clinical Courses.

25. *NUMBER OF EXAMINATIONS:

The University shall conduct not more than two examinations in a year, for any subject, with an interval of not less than 4 and not more than 6 months between the two examinations. The examination shall be conducted in March and September.

***Sl. No.25 Amended in XXI meeting of Academic Council dated 22.07.2015.**

Resolved to approve the commencement of M.D. /M.S. University examination in April (for Regular Batch) and October (for Supplementary Batch).

26. REVALUATION OF ANSWER PAPERS:

There shall be no revaluation of answer papers. However, re-totaling is allowed in the failed subjects with the payment of required fee fixed by the University within 15 days from the date of receipt of statement of marks.

SYLLABUS FOR M.D. POSTGRADUATE COURSE **RESPIRATORY MEDICINE**

1. GOALS:

1. To prepare a specialist in respiratory medicine who must recognize the health needs of patients having chest complaints and carries out professional obligations in keeping with principles of National Health Policy and Professional ethics.
2. Achieve the competency in the field of Respiratory Diseases and can practice at the secondary and tertiary level of the health care delivery system.
3. The person must be trained in tuberculosis disorders keeping the objective of the National Health Policy.
4. The person shall be abreast with the recent advances and developments in the specialty of chest medicine.
5. The person should be oriented to the principles of research methodology.
6. The person must acquire basic skills in educating medical and paramedical professionals.

2. OBJECTIVES:

1. The student should obtain adequate knowledge in basic sciences like Embryology, Anatomy, Physiology, Biochemistry, Micro-biology and general surgical principles related to TB&RD.
2. He/ she should have proper understanding of pathophysiology of most of the illnesses related to the speciality.
3. They should recognize and properly diagnose the ailments pertaining to TB & RD and also other common health problems of community.
4. He/she should gain adequate skills to individually manage TB&RD diseases both medically and surgically as per the need.
5. They should manage all kinds of emergencies in TB&RD independently keeping in mind the limitations existing in his place of work.
6. They should be able to perform tests and Interventions like Thoracostomy,
7. Polysomnography, Bronchoscopy, Medical Thoracoscopy & Pulmonary Function tests, etc.

8. He/she should learn the basic methodology in teaching medical and paramedical students.
9. He/she should keep a track of current developments in the field of TB & RD.
10. They should be able to conduct research works, keep proper records and prepare reports and presentations of the same.
11. They should have basic knowledge about Biostatistics.

3. SYLLABUS

PART I: HISTORICAL PERSPECTIVES

PART II: SCIENTIFIC PRINCIPLES OF RESPIRATORY MEDICINE

SECTION A: Anatomy and Development of the Respiratory Tract

- Anatomy of respiratory system
- Functional design of the lung for gas exchange
- The Respiratory muscles
- Development and growth of the lung
- Pulmonary surfactant system and alveolar homeostasis
- Blood supply, lymphatics and nerve supply
- Non-respiratory function of the lungs

SECTION B: Respiratory Physiology

- Pulmonary mechanics
- Control of ventilation
- Ventilation, Pulmonary blood flow and ventilation-perfusion relationships
- Diffusion, Chemical reactions and diffusing capacity
- Blood Gas Transport
- Inhalation kinetics and its implication in aerosol therapy
- Arterial blood gases
- Acid-Base Balance
- Lung in different physiological states-Sleep, Exercise, Pregnancy, Ageing

SECTION C: Respiratory Pharmacology

- General pharmacologic principles
- Airway pharmacology
- Pulmonary Vascular Pharmacology

SECTION D: Defense Mechanisms and immunology

- Pulmonary Surfactant
- Mucus production, Secretion and Clearance
- Lymphocytes & Macrophage- Mediated inflammation in the Lung
- Mechanisms of hypersensitivity reactions
- Antibody mediated Lung defenses and Humoral immunodeficiency

SECTION E: Respiratory Pathology and Inflammation

- Inflammation injury and repair
- Oxidative and Nitrosative Lung Injury
- Reactions to acute and chronic injury
- The pathogenesis of pulmonary fibrosis

PART III: DIAGNOSIS & EVALUATION OF RESPIRATORY DISEASE

SECTION F: Clinical features

- Symptomatology: Breathlessness, Cough, Hemoptysis, chest pain
- Physical signs
- Dermatological manifestations of lung diseases.
- Pulmonary-systemic interactions

SECTION G: Diagnostic procedures

- Radiologic evaluation of the Chest
- Pulmonary Cytopathology
- Interventional radiology in Thorax- Vascular and Non vascular applications
- Scintigraphic evaluation of pulmonary disease
- Pulmonary function testing and their interpretations
- Cardiopulmonary exercise testing
- Blood gas analysis
- Bronchoscopy and related procedures
- Thoracoscopy
- Mediastinoscopy and VAT
- Transthoracic needle aspiration and biopsy
- Basics of ECG and Echocardiogram interpretation
- Polymerase chain reaction, D.N.A probe, BACTEC

PART IV: CLINICAL RESPIRATORY MEDICINE

SECTION H: Obstructive diseases of the lungs

- Bronchial Asthma
- Chronic Obstructive Pulmonary Diseases
- Bronchiectasis
- Cystic Fibrosis
- Pulmonary Rehabilitation
- Acute Bronchiolitis and Bronchiolitis obliterans
- Upper airway obstruction
- Bronchiolitis Obliterans Organizing Pneumonia (BOOP)
- Bullous Diseases of lung

SECTION I: Infectious Diseases

- Upper Respiratory Tract Infections
- Pyogenic Bacterial pneumonia, Lung abscess and Empyema
- Tuberculosis and other Mycobacterial Pulmonary Disease
- Pulmonary Fungal Infections
- Viral and parasitic infections
- Parasitic Lung Infections
- Pulmonary Complications of HIV Infection

SECTION J: Neoplasms of the Lung

- Biology of Lung Cancer
- Epidemiology of Lung Cancer
- Bronchogenic carcinoma
- Lymphoma, Lymphoproliferative Diseases and other primary malignant tumors
- Metastatic Malignant tumors
- Benign Tumors

SECTION K: Disorders of the Pulmonary Circulation

- Pulmonary Thromboembolism
- Pulmonary vasculitis
- Pulmonary Arteriovenous malformations
- Pulmonary Edema and Acute Lung injury
- Pulmonary hypertension and Cor Pulmonale

SECTION L: Infiltrative and Interstitial Lung Diseases

- Approach to Diagnosis and management of Idiopathic Interstitial pneumonias
- The Lungs and Connective Tissue Diseases
- Sarcoidosis
- Diffuse Alveolar and other rare Infiltrative Disorders
- Eosinophilic Lung Disorders
- Lymphangioliomyomatosis
- Pulmonary Alveolar Proteinosis

SECTION M: Environmental and Occupational Disorders

- Occupational Asthma
- Pneumoconiosis
- Hypersensitive Pneumonitis
- Air Pollution
- Acute Pulmonary responses to Toxic Exposures
- High Altitude
- Diving Medicine
- Drug induced Pulmonary Diseases

SECTION N: Disorders of the pleura

- Non-Malignant Pleural Effusions
- Malignant Pleural Effusions
- Pneumothorax, Chylothorax, Hemothorax and Fibrothorax
- Tumors of the Pleura

SECTION O: Disorders of the Mediastinum

- Nonneoplastic Disorders of the mediastinum
- Congenital cysts of the mediastinum: Broncho pulmonary foregut abnormalities
- Acquired Lesions of the Mediastinum: Benign and Malignant

SECTION P: Disorders of the Chest wall, Diaphragm and Spine

- Nonmuscular Diseases of the Chest Wall
- Effects of Neuromuscular Diseases on ventilation
- Management of Neuromuscular Respiratory Dysfunction

SECTION Q: Disorders in the control of Breathing

- Sleep Disorders

- Hypoventilation and Hyperventilation Syndromes

SECTION R: Acute Respiratory Failure

- Acute Respiratory Distress Syndrome: Pathogenesis
- Acute Lung Injury and the ARDS: Clinical Features, management and outcomes.
- Principles of Mechanical ventilation

SECTION S: Surgical Aspects of Pulmonary medicine

- Perioperative Care of the patient undergoing Lung Resection
- Pre- and post-operative evaluation and management of thoracic surgical patient
- Post-operative pulmonary complications
- Thoracic Trauma
- Lung Transplantation

SECTION T: Management and therapeutic interventions

- Pulmonary pharmacotherapy
- Oxygen therapy
- Cardiorespiratory resuscitation
- Inhalation therapy
- Pulmonary rehabilitation
- Terminal care in respiratory diseases

SECTION U: Preventive Pulmonology

- Prevention & control of lung diseases smoking behavior and counseling
- Patient education in bronchial asthma, tuberculosis, and COPD

First 2 months (Orientation program):

1. Attending PG orientation program. (Covering the main teaching methods, issues relating to establishing rapport with the patients, Ethical issues involved in rendering the patient care services, research methodology)
2. Care of indoor patients under guidance of seniors.
3. Taking case-history, working up indoor cases, writing admission and discharge summaries.
4. Performing Minor-OT procedures in OPD.
5. Attending emergency and referral calls under the supervision of Senior Resident /Assistant Professor / Associate Professor.
6. Attending ward rounds and assisting in carrying out the instructions by senior staff.

7. Attending Out Patient Department patients under the supervision of seniors.
8. Keeping records and maintenance of ward, OPD, and emergency statistics.
9. Preparation of Dissertation protocol and getting it approved by the PG thesis committee and the Ethical committee of the concerned Institute.

After 2 months to the end of the course:

1. Presenting indoor patients in ward rounds
2. Attending OPD patients.
3. Doing emergency duties of 24hr duration by rotation among all residents.
4. Presenting seminars, journals, cases on rotation basis.
5. Attending Inter-departmental meetings and planning the management.
6. Ensuring proper management of indoor patients and proper record keeping by juniors.
7. Attending medical care review meetings, Central Academic programmes and other guest-lectures organized by institute.
8. Taking clinical classes for undergraduate students posted in TB&RD.
9. Properly carrying out dissertation work and submitting in scheduled time.
10. Taking interest in research work, publishing review articles / case reports .
11. Attending conferences and work-shops.
12. Maintaining a Log Book.

TEACHING PROGRAMME:

General Principles

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

Teaching Sessions

- Clinical case discussions- bed side
- Teaching rounds
- Mock Examination
- Seminars/Journal club
- Mortality meetings
- Interdepartmental Meetings
- Others – Guest lectures/vertical seminars

Teaching Schedule

In addition to bedside teaching rounds in the department, there will be daily hourly sessions of formal teaching. The suggested teaching schedule is as follows:

- | | | |
|------------------------------|---|----------------|
| 1. Bed side case discussion | - | Once a week |
| 2. Journal club/Seminar | - | Alternate week |
| 3. Grand round | - | Once a week |
| 4. Emergency case discussion | - | Once a week |
| 5. Mortality meets | - | Once a month |
| 6. Lecture | - | Once a week |
| 7. Radiology Discussion | - | Once a week |

Practical and Clinical Training

The practical and clinical training involves acquiring the clinical and practical skill and competency in medical emergency management.

Clinical Skills

1. Clinical history taking and physical examination ability to analyse symptomatology and physical signs; interpret their significance and arrive at a diagnosis; case-sheet writing and case presentation.
2. Interpretation of the laboratory data including sputum examination macroscopic and microscopic- Gram's stain, AFB, cytology including malignant cells.
3. Interpretation of the pulmonary function studies, ECG, ECHO, skin tests, blood gas analysis, and other investigations.
4. Interpretation of chest X-ray, CT scan MRI and ultrasonography.
5. Observation of bronchoscopic procedures.
6. Oxygen therapy.
7. Nebulization therapy

Practical Skills

A) Skills to perform diagnostic test

1. Sputum and other body fluid examination with Gram's stain, ZN stain, and malignant cells.
2. FNAC of lymph nodes, lung and mediastinal masses
3. Evaluation of diagnostic tests.

4. Pulmonary function tests
5. Skin tests: Mantoux test, allergen tests
6. BCG vaccination
7. Sleep laboratory studies
8. Blood gas analysis

B) Therapeutic Procedures

1. Aspiration of pleural, peritoneal and pericardial fluid.
2. Tube thoracostomy including management of pneumothorax.
3. Postural drainage and respiratory muscle training
4. Lung biopsy
5. Pleural biopsy.
6. Bronchoscopy-aspiration, lavage and biopsy.

Medical Emergency Management

1. Management of acute asthma, pneumothorax, hemothorax, acute exacerbation of COPD, hemoptysis.
2. Cardiopulmonary resuscitation
3. Endotracheal intubations
4. Management of acute respiratory failure and ARDS
5. Pulmonary thromboembolism.

POSTINGS:

First year:

- | | |
|-------------------------|------------|
| 1. Respiratory medicine | -10 months |
| 2. Anatomy | - 2 weeks |
| 3. Physiology | - 2weeks |
| 4. Pathology | - 2 weeks |
| 5. Microbiology | - 2 weeks |

Second year:

- | | |
|---------------------------|------------|
| 1. Respiratory Medicine | - 8 Months |
| 2. Internal Medicine | -1 Month |
| 3. Cardiology | - 1 Week |
| 4. Cardiothoracic Surgery | - 1 Week |
| 5. ICU | - 1 Month |
| 6. Government Hospital of | |

Thoracic Medicine, Tambaram
7. Radiology

-1 Month
-2 weeks

Third Year: Department of Respiratory Medicine

The candidate shall be posted in outpatient and inpatient concurrently and in emergency including intensive care unit.

ASSESSMENT:

GENERAL PRINCIPLES

- The assessment is valid, objective and reliable
- It covers cognitive, psychomotor and affective domains

1. INTERNAL ASSESSMENT

The performance of postgraduate student during the training period should be monitored throughout the course and duly recorded in the log book as evidence of the ability and daily work of the student.

Personal attributes

- Behavior and emotional stability- Dependable, disciplined, dedicated, stable in emergency situations, shows positive approach.
- Motivation and initiative- Takes on responsibility, innovative, enterprising, does not shrink duties or leave any work pending.
- Honesty and integrity- Truthful, admits mistakes, does not cook up information, has ethical conduct, exhibits good moral values.
- Interpersonal skills and leadership qualities- Has compassionate attitude towards patients and attendants, gets on well with colleagues and paramedical staff, is respectful to seniors, has good communication skills.

2. CLINICAL WORK

- Availability
- Academic ability
- Clinical performance

3. ACADEMIC ACTIVITY

Performance during presentation at journal club, seminar, case discussion and other academic sessions

4. END OF TERM THEORY EXAMINATION

5. END OF TERM PRACTICAL/ ORAL EXAMINATION

THEORY EXAMINATION (TOTAL - 400)

PAPER	TITLE	MARKS
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Paper I	Basic sciences related to Tuberculosis and Respiratory medicine	100
Paper II	Principles & Practice of Tuberculosis (Pulmonary & extra Pulmonary)	100
Paper III	Principles & Practice of Non- tuberculosis Respiratory Diseases	100
Paper IV	Recent advances in respiratory medicine including critical care, Immunology and environmental pollution	100

CLINICAL AND VIVA VOCE EXAMINATION (TOTAL = 400)

CLINICAL/ PRACTICAL CASES

Long case 1 (1 x 150)	150
Short case 2 (2 x 75)	150

Total	300

VIVA VOCE (Including) (25 x 4 = 100) (TOTAL = 100)

- a. Slides and Specimens
- b. Charts – ABG, PFT, ECG, Sleep Study
- c. Radiology
- d. Instruments and devices

RECOMMENDED BOOKS & JOURNALS

1. Fishman’s pulmonary diseases and disorders
2. Crofton and Douglas Respiratory diseases
3. Text book of Respiratory Medicine Murray and Nadel
4. Fraser and Pare’s diagnosis of diseases of Chest
5. Harrison’s principle of Internal Medicine
6. Oxford Handbook of Respiratory medicine
7. Chest Roentgenology - Benjamin Felson
8. Text book of Radiology and Medical Imaging - David Sutton
9. Diagnostic Imaging Peter Armstrong
10. High resolution CT of the Chest – Eric J Sarn
11. Flexible Bronchoscopy - Atul C Mehta
12. Diagnostic Bronchoscopy Peter Strading
13. Trans bronchial and endobronchial biopsies-Philips
14. Occupational Lung diseases - Hunters
15. Respiratory Physiology -The Essentials John B West
16. Nunn’s applied Physiology
17. Egan’s fundamentals of Respiratory Care
18. Baum’s text book of pulmonary diseases
19. Imaging of diseases of the Chest – Peter Armstrong

20. Interpretation of Pulmonary function Tests - Robert
21. Pleural diseases - Lights
22. Asthma -Peter J Barnes
23. Essentials of Pulmonary and Critical care Medicine
 1. Therapeutic strategies in COPD
 2. Bate's Physical examinations.
 3. Current Pulmonary Diagnosis and Treatment
 4. Mally Clinical Blood Gases
 5. Introduction to clinical exam- MacLeod
 6. Chamberlin - symptoms and signs
 7. Clinical Medicine - Hutchison

TUBERCULOSIS

1. Tuberculosis by William N.Rom and Stuart Garay
2. Tuberculosis - S.K.Sharma
3. Tuley's skeletal Tuberculosis.
4. Medicine in Tropics – Tuberculosis in Children
5. Pulmonary Tuberculosis – P.S. Shankar
6. Toman – Tuberculosis.
7. Updates on RNTCP

Journals:

(A) Indian

1. Journal of Association of Physicians of India
2. Indian Journal of Medical Research
3. Indian Journal of Tuberculosis
4. Indian Journal of Chest Diseases & Allied Sciences
5. Lung India
6. Indian Journal of Bronchial Asthma

(B) International

1. Lancet
2. Chest
3. American Journal of Respiratory & Critical Care Medicine
4. Thorax
5. European Respiratory Journal
6. Tubercle and Lung disease
7. Respirology
8. New England Journal of Medicine
9. Pulmonary Medicine
10. Journal of Applied Physiology