Amala
INSTITUTE OF MEDICAL SCIENCES
NABH & NABL ACCREDITED | ISO 9001: 2015
REDEFINING CARE everyday in every way

AMALA INSTITUTE OF MEDICAL SCIENCES, THRISSUR

Affiliated to Kerala University of Health Sciences (KUHS)

SYLLABUS FOR PG SUPER SPECIALITY PROGRAMME

DOCTORATE OF MEDICINE(DM)/ MASTER OF CHIRURGIAE(MCh)

REGULATIONS2016

SYLLABUS

For Courses affiliated to the

Kerala University of Health Sciences

Thrissur 680596

SUPER SPECIALITY COURSE IN MEDICINE

DM Pulmonary Medicine

Course Code 240

(2016-17 Academic year onwards)

2016

2. COURSE CONTENT

2.1 Title of course:

DM Pulmonary Medicine

2.2 Objectives of course

GENERAL GOALS OF THE RESIDENCY TEACHING CUM TRAINING PROGRAM IN DM

Pulmonary Medicine

The main goal of the training program is to produce pulmonary physicians with the necessary knowledge, skill and attitude to diagnose and manage in an effective manner, a wide range of clinical problems in Pulmonary Medicine as seen in the community or in secondary/tertiary care setting. Special emphasis is placed on the relatively common and treatable disorders. Possession of clinical skills required for making a diagnosis is given utmost importance.

As a result of training in Pulmonary Medicine, the physician should become competent in life saving interventions, the use of the various diagnostic tests, and interprets their results intelligently & promptly. In addition, trained pulmonary physician should possess knowledge and skills of all the relevant medical fields and appropriately deliver the required health care in these sectors. It is considered desirable for the post graduate residents from this specialty to be familiar with the fundamentals of research methodology also.

In order to be considered a competent Pulmonologist, a resident in Pulmonary Medicine must possess humanistic qualities, attitudes and behaviour necessary for the development of appropriate patient-doctor relationship.

SPECIFIC AIMS AND OBJECTIVES OF THE RESIDENT TRAINING PROGRAM IN PULMONARY MEDICINE

As a result of the training under this program, at the end of 3 years of postgraduate training, a resident must acquire the following knowledge, skills and competencies:

☆

1. A thorough knowledge of pathological abnormalities, clinical manifestations, and principles of management of a large variety of medical conditions affecting respiratory system.

2. Skill and competence to choose and interpret correctly the results of the various routine investigations necessary for proper management of the patient. While ordering these investigations, a resident must be able to understand the sensitivity, specificity and the predictive value of the proposed investigation, as well as its cost-effectiveness in the management of the patient.

3. Skill and competence in interventions like endotracheal intubation, needle lung biopsy, bronchoscopy, needle thoracocentesis, Intercostal drain placement, pericardiocentesis, thoracoscopy, and various endobronchial procedures.

4. Skills and competence to perform commonly used diagnostic procedures, namely, pleural aspiration, pleural biopsy, lung biopsy, allergy testing, fine needle aspiration, polysomnography, ultrasonography and cardiopulmonary exercise testing.

5. Skill and competence to choose and interpret correctly the results of specialized investigations including radiologic, ultra-sonographic, biochemical, hemodynamic, electro-cardio graphic, electrophysiological, pulmonary functional, haematological, immunological, nuclear isotope scanning, arterial blood gas analysis results. polysomnographic and bronchoscopic results.

6. Skill and competence to provide consultation to other medical and surgical specialties and sub-specialties, whenever needed.

7. Skill and competence to function effectively in varied clinical settings, namely emergency/critical care, ambulatory care, out-patient clinic, in-patient wards.

8. Skill and competence to take sound decisions regarding hospitalization, or timely referral to other consultants of various medical sub specialties recognizing his limitations in knowledge and skills in these areas.

9. Proficiency in selecting correct drug combinations for different clinical problems with thorough knowledge of their pharmacological effects, side-effects, interactions with the

other drugs, alteration of their metabolism in different clinical situations, including that in the elderly.

10.Skill and competence to advise on the preventive, restorative and rehabilitative aspects including those in the elderly, so as to be able to counsel the patient correctly after recovery from an acute or chronic illness.

11. Skill and competence to understand research methodology in Pulmonary Medicine and to undertake a critical appraisal of the literature published in various medical journals and be able to apply the same in the setting in which the resident is working.

12. Skill and competence to work cohesively in Resuscitation team along with paramedical personnel and maintain discipline and healthy interaction with the colleagues.

13. Skill and competence to communicate clearly and consciously, and teach other junior residents, medical students, nurses and other paramedical staff, the theory as well as the practical clinical skills required for the practice of Pulmonary Medicine.

2.3 Medium of instruction:

The medium of instruction for the course shall be English.

2.4 Course outline

Present in clause "Content of each subject in each year " the curriculum.

2.5 Duration

Every candidate seeking admission to the training programme to qualify for the degree of D.M in the subjects shall pursue a regular course as a full time student, in the concerned Department under the guidance of a recognized super speciality teacher for a period of three years. The course commences from 1st August in each year.

2.6 Syllabus

Present in clause "Content of each subject in each year " of the curriculum.

2.7 Total number of hours

There are 52 weeks in a year. Approximately 2 weeks are gazetted / restricted holidays. Therefore, for academic requirements 50 weeks per year are available. Hence, for a

three year course 150 weeks are available. Out of these, 10 weeks in three years are not available for hospital work & academics due to conferences / CMEs / exchange programmes / thesis and case study writing.

Since this speciality demands a 24 hour service to the people, post graduates are required to work 8 hours a day and they are given a day off in a week.

Hours available per day

Six days in a week 8 hours 8 hours

Total number of hours per week 8X6 48 hours.

Total credit hours available for academics

(No of weeks X No of hours available /week = 150 X 48 = 7200 hrs)

The break up is proposed to be as follows :

A	Bedside teaching / Practicals. No of weeks(140) X No of working day / week (6) X No of hours available /day (6)	5040 hrs
B	Thesis / case study writing / conferences / CMEs programmes (No of weeks (10) X No of hours available /week (48))	480 hrs.
C	Theory No of weeks(140) X No of working day / week (6) X No of hours available /day (2)	1680 hrs
	Grand total	7200 hrs

A. Practical

1) **Skill stations** 140 X 6 hours = 840 hrs.

Duration 6 hrs / week

No of weeks 140.

Skill Stations: Includes all the bedside medical skills pertaining to Pulmonary Medicine

2) **Bed side Medical clerky** 140 X 30 = 4200 Hrs

Duration 5 Hrs / day.- 30 hrs / week.

Bed side Medical clerky includes case history taking, formulating a working diagnosis, ordering appropriate investigations, and accompanying the patient to the specialized investigation areas, interpretation of all the results and finally starting the treatment protocol for them.

It also lays emphasis on in field resuscitation and transportation of critically ill patients and continuing the care in the ER, ICU and various other places also.

B. Thesis writing :

NOTE: The 480 hours available should be fruitfully utilized by the student for attending conferences / CME programmes and for dessertation and case study. Apart from this they can utilize these hours for creating basic awareness of Pulmonary Medicine among the other specialties and common masses.

C. Theory

Total Hours Available 1680 hours.

Besides interactive lectures theory includes Induction, documentation, Orientation, Journal Club, Internal Examination and Final Examination.

2.8 Branches if any with definition

Present in clause "Content of each subject in each year " of the curriculum.

2.9 Teaching learning methods

TRAINING PROGRAM

The training program will aim to give the candidate a sound training of cardiac diagnosis and management. During the period of training they shall take part in all the activities of the department including ward rounds, lectures, seminars, teaching assignments, laboratory studies, surgical session and other duties assigned to them by the Head of the Department.

All candidates shall work as full time residents during the period of training.

The training program shall be updated as and when required. The training shall include:-

a) Active involvement in the diagnosis and management of patients both in the outpatient, coronary care unit and the wards.

b) Participation in lectures, seminars, journal clubs, clinical group discussions etc.

c) Exposure to basic and advanced diagnostic, therapeutic and laboratory techniques.

d) Exposure to biomedical statistics as applicable to basic research methodology

e) Post graduate students shall maintain log books of the work carried out by them. The log books shall be checked and assessed every 6 months by the faculty members, with a view to assure the progress the candidate has made and spot the inadequacies if any.

Out station training

Outstation training may be given if required. It should not exceed 2 months, the duration, center etc: - will be at the discretion of the Head of the department.

Teaching

All D.M students should take part in the teaching of the post graduate degree students of related subjects, undergraduate medical students and paramedical students and allied health science students posted in the department by rotation.

CLINICAL SKILLS

1. History taking & Physical examination: Analysis of data for clinical diagnosis
2. Knowledge about common clinical problems, Symptom complex, Diagnostic reasoning
3. Various investigations, interpretation
4. Interventional procedures
5. Critical care, Life saving procedures, Palliation and end of life decisions

COMMUNICATION SKILLS

1 Professional Relationships

- A Patients and relatives
- B Colleagues/team work
- C Other staff

2 Consultation Skills

3 Record keeping

4 Bereavement Care

- A Breaking bad news
- B Referral for counselling

MANAGERIAL SKILLS

1 Policies/procedures (NHS, Hospital, Departmental)

2 Staff management (planning, recruitment, appraisal)

3 Equipment (choosing to ordering, medical physics)

4 Resource management/clinical budgeting

5 Contracting/ setting standards, quality monitoring

6 Information technology/Health informatics

7 Clinical governance/audit, risk management

8 Compliments/complaints

9 Medico-legal statements

10 Committee Work

11 Liasing with other agencies (e.g. police, coroner)

12 Public Relations/media

13 Major Incident planning/exercises

TEACHING SKILLS

1 Lecture preparation

2 Small Group techniques

3 Presentation techniques

4 Teaching critique

5 Departmental teaching programme

6 Professional Development (self-directed learning)

7 Teaching certificate expected

RESEARCH SKILLS

1 Literature survey

2 Scientific study design

3 Data evaluation/Statistics

4 Preparing publications

PROFESSIONAL ATTRIBUTES

1 Leadership

2 Reliability

3 Teamwork

4 Self-motivation (prioritisation, project completion)

2.10 Content of each subject in each year

Each DM student is required to possess a comprehensive knowledge of the basic and clinical sciences related to pulmonary medicine and critical care, and clinical skills in diagnosing respiratory vis a vis other medical disorders. He/She should have personally performed a sufficient number of both invasive and non-invasive procedures for diagnosis and treatment such as bronchoendoscopic examinations and assisted ventilation; and manage acute respiratory emergencies. He/She should also possess sufficient knowledge and experience in research methodology and development.

1.Theory of Pulmonary and Critical Care Medicine

1**. Basic Sciences**

A. Anatomy of Respiratory system

1. Anatomy and histology of Respiratory System including airways, pleura, chest wall, lungs and mediastinum

2. Applied Embryology of lungs, mediastinum and diaphragm
3. Developmental anomalies

B. Physiology and Biochemistry

1. Assessment of pulmonary functions
2. Control of ventilation
3. Pulmonary mechanics
4. Ventilation, pulmonary blood flow, gas exchange and gas transport, Respiratory reflexes including cough reflex, lung defence including respiratory surfactant
5. Exercise physiology and testing
6. Non-respiratory functions of lung
7. Inhalation kinetics and its implication in aerosol therapy, sputum induction etc.
8. Acid-base and electrolytic balance
9. Physiology of sleep and their disorders
10. Pathophysiology of respiratory disorders

C. Microbiology

1. Mycobacterium tuberculosis and other mycobacteria
2. Laboratory diagnosis of tuberculosis (including staining, culture and immunological techniques)
3. Virulence and pathogenecity of mycobacteria
4. Bacteria causing respiratory diseases
5. Mycoplasma and respiratory tract infection
6. Anaerobes in pleuropulmonary infections
7. Laboratory diagnosis of nontubercular infections of respiratory tract
8. Respiratory viruses
9. Human Immunodeficiency virus
10. Respiratory fungi: i. Classification of fungal diseases of lung, candidiasis, Actinomycosis, Nacardiosis, Aspergillosis, Blastomycosis etc. ii. Laboratory diagnostic procedures in respiratory mycosis caused by yeast like and Filamentous fungi

11. Opportunistic infections in immunosuppressed host
12. Respiratory parasitic infections

D. Pathology

1. Acute and chronic inflammation
2. Tuberculosis
3. Pneumonias and bronchopulmonary suppuration
4. Chronic bronchitis and emphysema, asthma
5. Occupational lung diseases and pneumoconioses
6. Interstitial Lung Diseases
7. Tumours of the lung, mediastinum and pleura
8. Various mechanisms of hypersensitivity reactions seen in respiratory diseases
9. Diagnostic tests in Allergic diseases of lung – in vitro and in vivo tests, bronchial provocation test
10. Immunology of Tuberculosis

E. Epidemiology

1. Epidemiological terms and their definitions
2. Epidemiological techniques – tuberculin test, surveys
3. Epidemiology of Tuberculosis, pneumoconioses, asthma, COPD and lung cancer
4. National Tuberculosis Control Programme and RNTCP
5. BCG and prevention of TB
6. Research methods and study designs

F. Pharmacology

1. Antimicrobial drugs
2. Antitubercular drugs
3. Antineoplastic drugs
4. Corticosteroids
5. Anti-asthma drugs

6. Drugs used in microbial viral, fungal and parasitic infections
7. Pharmacokinetics and drugs interaction for commonly used drugs in respiratory diseases

2. Clinical Sciences

A. Infections

a. Tuberculosis

1. Etiopathogenesis
2. Diagnostic methods
3. Differential diagnosis
4. Management of pulmonary tuberculosis including drug resistant TB
5. Complications in Tuberculosis
6. Tuberculosis in children
7. Geriatric tuberculosis
8. Pleural and pericardial effusion and Empyema
9. Mycobacterial other than mycobacterial infections
10. Extrapulmonary tuberculosis
11. HIV and tuberculosis

b. Non-Tuberculous infections of the lungs

- Upper respiratory tract infections
- Approach to the patient with pulmonary infections
- Community Acquired pneumonia
- Nosocomial pneumonias
- Unusual and atypical pneumonias including bacterial, viral, fungal and parasitic rickellsial
- Bronchiectasis and lung abscess
- Acquired immunodeficiency syndrome and opportunistic infections in immuno-compromised host
- Bronchitis and bronchiolitis

B. Non-infectious Lung Diseases

1. Interstitial Lung Disorders
    1. Immune defense mechanisms of the lung
    2. Sarcoidosis
    3. Hypersensitivity pneumonias
    4. Lung involvement in collagen-vascular diseases
    5. Eosinophilic pneumonias and tropical eosinophilia
    6. Pulmonary vasculitides
    7. Reactions of the interstitial space to injury
    8. Pulmonary fibrosis
    9. Occupational pulmonary diseases
    10. Interstitial diseases of other aetiologies
    11. Drug induced pulmonary diseases
    12. Aspiration and inhalational (non-occupational) diseases of the lung
2. Pulmonary Criculatory disorders
    - Pulmonary edema
    - Pulmonary Hypertension and cor pulmonale
    - Pulmonary Thromboembolic Diseases
    - Cardiac problems in Pulmonary patient and pulmonary diseases produced by cardiac diseases
3. Obstructive Diseases of the Lungs
    - Asthma
    - Chronic obstructive lung disease
    - Pulmonary rehabilitation
4. Cancer of the Lungs
    - Epidemiology, pathology, natural history and clinical picture and staging of the carcinoma of lungs and other tumour
    - Approach to diagnosis of pulmonary nodule, cell lungs cancer

- Medical management and surgical treatment of lung cancer and paraneoplastic syndrome
- Radiation therapy in the management of the carcinoma of the lungs
- Paraneoplastic syndromes

5. Diseases of the Mediastinum
   - Benign and malignant tumours
   - Non-neoplastic disorders
6. Disorders of the pleura
   - Pleural dynamics and effusions
   - Non-neoplastic and neoplastic pleural diseases
   - Pneumothorax
   - Pyothorax and broncho-pleural fistula and its complications

7. Sleep related breathing disorders
8. Obesity hypoventilation disease
9. High altitude
10. Drug induced
11. Disorders of diaphragm
12. Respiratory failure
    - Acute Respiratory Distress Syndrome: Pathology, pathogenesis diagnosis and management
    - Respiratory failure in the patient with obstructive airway disease
    - Respiratory muscle fatigue
    - Respiratory and haemodynamic monitoring in acute respiratory failure
    - Mechanical ventilation (indications, modes, complications and weaning)
    - Principles of critical care
13. Respiratory Care
    - Oxygen therapy

- Inhalational therapy
- Bronchial hygiene

C. Surgical aspects of Chest Medicine

- Pre and post-operative evaluation and management of thoracic surgical patient
- Post operative pulmonary complication
- Chest Trauma/trauma related lung dysfunction

D. Investigative/Therapeutic procedures

- Pulmonary function test and its interpretations in determining the disability
- Spirometry, compliance, resistance, lung volume, diffusions
- Bronchoscopy, thoracoscopy and other endoscopic procedures
- Chest Imaging – x-ray chest, ultrasound, CT, Bronchography
- Pulmonary parasitic disease
- Environmental pollution – Indoor/outdoor; Tobacco smoking
- Blood gas analysis
- Cardiopulmonary exercise testing
- Bronchoprovocation tests
- Pulmonary angiography
- ECG and ECHO

E. Research and Clinical Epidemiology

- Research Methodology, study designs (cohort, case control, randomized clinical trials, observative and cross sectional studies)
- Common statistical methods for analysis of research
- Sources of bias

F. Critical Care and Assisted Ventilation

1. Respiratory Failure: Pathogenesis, causes, diagnosis and management
2. Resuscitation of the critically ill including multiple organ failure
3. Cardiopulmonary mechanics

4. Ventilatory principals, application, assessment and monitoring
5. Ventilatory care and support: Nutritional support; Infection control; complications
6. Weaning
7. Comprehensive care of the comatose
8. ICU designing

G. Paediatric pulmonology

1. Respiratory problems in children
2. Infective pneumonias
3. Childhood tuberculosis
4. Respiratory distress syndrome of the newborn
5. Bronchopulmonary dysplasias
6. Congenital malformations
7. Bronchial asthma
8. Cystic fibrosis
9. Special management problems in children

H. Pulmonary Radiology and Imaging

1. Interpretation of plain radiography, contract studies, CT scan, M.R.I. and ultrasound examination.
2. Interpretation of ventilation/perfusion scans

1. Respiratory rehabilitation

J. Ethical, legal, economic and other related issues involved in respiratory and critical care

1. Prioritization
2. Withholding and withdrawing mechanical ventilation
3. Legal consent
4. Brain death – certification
5. Palliative care

2. Clinical skills

1. Clinical history taking and examination; ability to analyse different clinical symptoms and signs; interpret their significance and reach a diagnosis
2. Interpretation of laboratory data
3. Interpretation of pulmonary function tests, ECG, ECHO and other investigations
4. Interpretation of chest roentgenography
5. Pulmonary histopathology and cytology
6. Oxygen therapy
7. Nebulization therapy
8. Mechanical ventilation – indications and applications

3. Practical skills

A. Microbiological

1. Sputum smear staining: Gram's AFB staining
2. Mantoux testing
3. BCG vaccination
4. Skin sensitivity tests

B. Pulmonary Function Tests

1. Spirometry
2. Bronchoprovocation tests
3. Body plethysmography
4. Respiratory Sleep monitoring
5. Exercise testing

C. Diagnostic procedures

1. Fine needle biopsy of lymph nodes, lung and mediastinal masses
2. Biopsy of pleural and lung masses

3. Fiberoptic bronchoendoscopic examination and related procedures including bronchial and transbronchial lung biopsy, bronchoalveolar lavage and fine needle aspiration (At least 50 procedures)

D. Therapeutic

1. Aspiration of pleural and pericardial effusion
2. Tube thoracostomy
3. Respiratory muscle exercising
4. Medical Emergency management
    i. Cardiopulmonary resuscitation
    ii. Management of acute emergencies
        . Acute respiratory failure
        . Acute asthma
        . Pneumothorax
        . Haemoptysis
        . Pulmonary thromboembolism
        . Multiple organ failure
5. Mechanical Ventilation: On hand training in providing both short and long term mechanical ventilatory support
    i. Invasive
        . Endotracheal intubation
        . Ventilatory settings
        . Care and maintenance
        . Monitoring
        . Weaning
    ii. Non-invasive ventilation including domicillary respiratory support

At the end of three years of training programme, a post graduate of DM Pulmonary Medicine should at least possess following skills

2.11 No: of hours per subject

Not applicable as the course is a Residency programme

2.12 Practical training given

Total duration of training program 3 Years

YEAR I

Introduction and preliminary posting in the Pulmonary Medicine	3 months
Respiratory Intensive Care Unit	3 month
General Medicine / Medical Intensive Care Unit	3months
Cardiology	2 months
Anaesthesiology	1 month

YEAR II

Pulmonary Medicine	3 months
Intensive Respiratory Care Unit	3 month
Paediatrics / PICU	2 months
Emergency Dept	2 months
Community Medicine	1 month
Cardiothoracic Surgery	1 month

YEAR III

Pulmonary Medicine	6 months
Pulmonary Critical care	6month
Final Examination in D M Pulmonary Medicine	

2.13 Records

Present in clause 2.21

2.14 Dissertation: As per Dissertation Regulations of KUHS

Thesis is an absolute requirement for D.M course and the candidate has to register the thesis synopsis in the University through proper channel within 6 months of admission. Thesis has to be submitted to the University for Evaluation at least 6 months prior to the conduct of final examination. Modifications and resubmission should be done before writing the examination. Even if the guide is transferred/ retired, the thesis has to be continued under his/her guidance or entrust to another guide in case the original person is not willing to continue. In extra ordinary situations change of guide and change of thesis topic is permissible with prior permission from the University. Only after accepting the thesis, the candidate will be eligible for writing the examination. In addition to this, the student has to present at least one paper/poster in a regional /national / international conference of the concerned speciality during his three year course or at least one publication in a peer reviewed journal. Research paper should be approved by the Institutional Review Board/ Institutional Ethical Committee.

Evaluation of Thesis

The thesis shall be evaluated by a minimum of three experts; one internal and two external experts, who shall not be the examiners for the Theory and Clinical examination of the concerned candidates and it may be accepted/ accepted with modifications/rejected. Only on the acceptance of the thesis by two experts out of three, the candidate shall be permitted to appear for the University examination. If the thesis is not accepted on evaluation by at least two experts, it shall be resubmitted with suggested modifications along with prescribed fees within the prescribed time stipulated by the University from time to time and it shall be re-evaluated by the same experts. If thesis is rejected by two experts, the candidate will lose first chance for appearing in the University examination and has to redo a fresh thesis for further evaluation.

2.15 Speciality training if any

Present in clause “Content of each subject in each year “ of the curriculum

2.16 Project work to be done if any

As stipulated by the Head of Department.

2.17 Any other requirements [CME, Paper Publishing etc.]

- Should have attended minimum of two International/ National/ Zonal/State conferences or workshops concerned with the area of specialization.
- Should have presented at least one paper/poster in International/ National/ Zonal/State conferences concerned with the area of specialization.(as per MCI norms)

OR

- At least one publication in a peer reviewed journal or at least two research papers or original works should be submitted for publication in peer reviewed journals (as per MCI norms).

2.18 Prescribed/recommended textbooks for each subject

As stipulated by the Head of Department.

2.19 Reference books

1. Respiratory diseases- John Crofton
2. Pulmonary Diseases and disorders- Frazer & Pare
3. Text Book of Pulmonary & critical care Medicine(2 volumes)- SK Jindal
4. NCCP text book of Respiratory medicine- D Behera
5. Tuberculosis(2 volumes) – Roth & Gare
6. Toman's tuberculosis
7. Paediatric Respiratory Illnesses- R Chetambath

2.20 Journals

a. Americal Journal of respiratory & critical care medicine
b. Europian Respiratory Jounrnal
c. Chest
d. Thorax
e. International Journal of Tuberculosis and Lung Diseases
f. Lung India
g. Indian Journal of Tuberculosis

h. India Journal of critical care medicine

2.21 Logbook

A log book is mandatory and has to be maintained by all students and this has to be reviewed by HOD / Unit Chief of the department regularly (at least quarterly). Minimum number of each of the academic activities to be performed by the candidate should be outlined for each speciality. Model check list for journal review/seminars/topic presentation/ teaching skill etc: - is shown in the appendix. Periodic formative assessment has also to be done in the department by the super speciality teachers. Log book will be evaluated during the University examination by all the four examiners with a maximum total mark of 20 in the viva component *(Check Lists appended).*

3.EXAMINATIONS

3.1 Eligibility to appear for exams

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

A candidate should appear for all the theory examinations and obtaining a minimum aggregate of 50% marks in theory part and practical part (Practical & Viva) separately shall be mandatory for passing the whole examination.

ELIGIBILITY FOR APPEARING IN FINAL EXAMINATION

1. A minimum of 80% attendance during each year of the course separately.
2. Successful Submission of completed Logbook.
3. Submission of Dissertation and its approval by the University.
4. Should have attended minimum of two International/ National/ Zonal/State conferences or workshops concerned with the area of specialization.
5. Should have presented at least one paper/poster in International/ National/ Zonal/State conferences concerned with the area of specialization.(as per MCI norms).

or

At least one publication in a peer reviewed journal or at least two research papers or original works should be submitted for publication in peer reviewed journals (as per MCI norms).

vi. The prescribed form (annexure 3) for each candidate should be filled up by concerned department and sent to KUHS for issuing hall ticket for the candidate to appear for the examination. If the candidate fails to meet the criteria, he will not be permitted to appear for the examination.

3.2 Schedule of Regular/Supplementary exams

Generally there shall be two university examinations in a year, one regular and one supplementary examinations with a usual gap of six months.

3.3 Scheme of examination showing maximum marks and minimum marks

There shall be theory, practical examination including viva voce at the end of the three year course. Theory examination shall consist of four papers (3 hours duration) including one on recent advances and each paper will carry a maximum of 100 marks. Each question paper shall consist of one essay question of 20 marks and 8 short essays of 10 marks each. There shall be a multiple evaluation of theory papers by two internal examiners and two external examiners and the average mark for each paper is taken as the final marks.

Sl.No.	Subject	Theory		Theory Group		Practical				Practical Group		Total	
		University				University		Viva					
		Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	Paper I	100	-										
2	Paper II	100	-										
3	Paper III	100	-	**400**	**200**	**300**		**100**		**400**	**200**	**800**	**400**
4	Paper IV	100	-										

3.4 Papers in each year

Not applicable

3.5 Details of theory exams

As per clause 3.3

Paper 1 Applied basic sciences in relation to General Medicine & Pulmonary Medicine

Paper 2 Non infectious Respiratory Diseases including those affecting Respiratory centre, Chest wall and Mediastinum

Paper 3 Respiratory Infections including tuberculosis

Paper 4 Respiratory Critical Care and recent advances in Pulmonary Medicine

3.6 Model question paper for each subject with question paper pattern

Paper I

Applied basic sciences in relation to General Medicine & Pulmonary Medicine

-- 100marks

1) What is acquired immunodeficiency? Discuss the different pulmonary problems in an immunosuppressed patient. 1 x 20 =20

2) Write short essays on 8 x 10 = 80

a) Thoracic outlet syndrome

b) Role of diaphragm in Respiration

c) Dynamic compliance

d) Delayed type hypersensitivity

e) Line probe assay

f) Role of ultrasound in Pulmonary Medicine

g) Pressure support ventilation

h) Sepsis syndrome

****

Paper II

Non infectious Respiratory Diseases including those affecting Respiratory centre, Chest wall and Mediastinum

-- 100marks

1) Discuss in detail the relationship between sleep disordered breathing and Hypertension and review relevant studies. 1 x 20 = 20

2) **Write short essays on** 8 x 10 = 80

a) Chylothorax

b) Asthma mimics

c) Tiotropium

d) Congenital cystic adenomatoid malformations

e) Honey comb lung

f) LVRS

g) Tracheal stenosis

h) Primary pulmonary hypertension

****

Paper III

Respiratory Infections including tuberculosis

-- 100marks

1) What is pneumonia severity index? Discuss the management of community acquired pneumonia 1 x 20 = 20

2) Write short essays on 8 x 10 = 80

a) Mycobacterium growth index tube

b) Acinetobacter

c) XDR TB

d) Exudative effusion

e) Hospital infection control policy

F) Viral Pandemics

g) Haemopysis

h) Hydatid Cyst

****

Paper IV

Respiratory Critical Care and recent advances in Pulmonary Medicine

-- 100marks

Model Questions

1) How will you manage a case of ARDS with multiorgan failure 1 x 20 = 20

2) Write short essays on 8 x 10 = 80

a) Pulmonary AV fistula

b) DLCo

c) Indacaterol

d) Bronchial artery enbolization

e) LVEF

f) Toxic gas inhation

g) Diagnosis of Pulmonary thromboebolism

h) Lupus pneumonia

****

3.7 Internal assessment component

Not applicable.

3.8 Details of practical/clinical practicum exams

Practical/Clinical examination shall consist of:

i1 long case –100 marks
ii. 2 short cases –80 marks each = 160 marks
iii. Ward rounds – 40 marks

Viva voce –80 marks
Log Book 20 marks
Total 100 marks

Total Marks Practicals & Viva Voce –400 marks

Long case discussion may take a maximum of 1 hr, short cases (total cases 2) - maximum 1 hr, ward rounds – maximum 30 minutes and Viva voce maximum of 1 hr. Maximum number of candidates that can be examined per day may be restricted to 3.

3.9 Number of examiners needed (Internal & External) and their qualifications

Examiners

1. All Examiners shall be a recognised super speciality teacher as per MCI norms. There shall be two internal examiners (from affiliated colleges of KUHS) and two external examiners (exclusively from outside the state). In departments where there are more than 2 professors, the head of the department preferably be a constant member of the board of examiners, and the other professors shall be posted as internal examiners on rotation basis.

2. Under exceptional circumstances, examinations may be held with 3 (three) examiners provided at least two of them is an external examiner subject to the ratification of the pass board.

3. In the event of there being more than one centre in one city, the external examiners at all the centres in that city shall be the same. Where there is more than one centre of examination, the University shall appoint a Co-ordinator/Convenor to coordinate the examination on its behalf.

3.10 Details of viva:

Viva voce	:80 Marks
Log book	**:20 Marks**
Total	**:100 Marks**

4.INTERNSHIP

Not applicable for Medical Superspecality degree courses.

5.ANNEXURES

5.1 Check Lists for Monitoring: Log Book, Seminar Assessment etc.

ANNEXURE - 1

CHECK LIST 1 - EVALUATION OF CLINICAL WORK

Name of the Trainee: Date:

Name of the Faculty:

Sl. No.	**Items for observation during evaluation**	*Poor* 0	*Below Average* 1	*Average* 2	*Good* 3	*Very Good* 4
1.	*Regularity of attendance*					
2.	*Punctuality*					
3.	*Interaction with colleagues and supportive staff*					

4.	*Maintenance of case records*					
5.	*Presentation of cases*					
6.	*Investigations work -up*					
7.	*Bed - side manners*					
8.	*Rapport with patients*					
9.	*Counseling patients relatives for interventional procedures*					
10.	*Overall quality of clinical work*					
	Total score					

ANNEXURE - 2

CHECK LIST 2 EVALUATION OF CLINICAL CASE PRESENTATION

Name of the Trainee: *Date:*

Name of the faculty:

Sl. No	**Items for observation during presentation**	*Poor*	*Below Average*	*Average*	*Good*	*Very Good*
		0	*1*	*2*	*3*	*4*
1.	**Completeness of history**					
2.	**Whether all relevant points**					

	elicited					
3.	**Clarity of presentation**					
4.	**Logical order**					
5.	**Mentioned all positive and negative points of importance**					
6.	**Accuracy of general physical examination**					
7.	**Whether all physical signs elicited correctly**					
8.	**Diagnosis: whether it follows logically**					
9.	**Investigations required** **In Relevant order**					
10	**Interpretation of Investigations**					
11	**Ability to discuss differential diagnosis.**					
12	**Discussion on management**					
	Grand Total					

ANNEXURE 3

CHECK LIST 3

EVALUATION OF SEMINAR PESENTATION

Name of the Trainee: Date:

Name of the Faculty:

Sl no	Items for observation during presentation	*Poor*	*Below Average*	*Average*	*Good*	*Very Good*
		0	*1*	*2*	*3*	*4*
1	***Whether other relevant publications consulted***					
2	***Whether cross - references have been consulted***					
3	***Completeness of Preparation***					
4	***Clarity of Presentation***					
5	***Understanding of subject***					
6	***Ability to answer the questions***					
7	***Time scheduling***					
8	***Appropriate use of Audio - Visual aids***					

9	***Overall performance***					
10	***Any other observation***					
	Total score					

ANNEXURE - 4

CHECK LIST 4

EVALUATION OF JOURNAL REVIEW PRESENTATIONS

Name of the Trainee: **D a t e :**

Name of the Faculty:

Sl. No	**Items for observation during presentation**	*Poor*	*Below Average*	*Average*	*Good*	*Very Good*
		0	*1*	*2*	*3*	*4*
1.	*Article chosen*					
2.	*Extent of understanding of scope & objectives of the paper by the candidate*					
3.	*Whether cross-references have been consulted*					
4.	*Whether other relevant publications consulted*					
5.	*Ability to respond to questions on the paper/ subject*					
6.	*Audio - Visual aids used*					
7.	*Ability to discuss the paper*					
8.	*Clarity of presentation*					

9.	*Any other observation*					
	Total Score					

ANNEXURE - 5

CHECK LIST 5

EVALUATION OF TEACHING SKILL

Name of the Trainee: **Date:**

Name of the faculty:

Sl. No.	**Items for observation**	**Strong Points**	**Weak Points**
1.	*Communication of the purpose of the talk*		
2.	*Evokes audience interest in the subject*		
3.	*The introduction*		
4.	*The sequence of ideas*		
5.	*The use of practical examples and / or illustrations*		
6.	*Speaking style (enjoyable, monotonous, etc. Specify)*		
7.	*Attempts audience participation*		
8.	*Summary of the main points at the end*		
9.	*Ask questions*		
10.	*Answer questions asked by the audience*		
11.	*Rapport of speaker with his audience*		

12.	*Effectiveness of the talk*		
13.	*Uses AV aids appropriately*		

ANNEXURE - 6

CHECK LIST 6

EVALUATION OF DISSERTATION PRESENTATION

Name of the Trainee: Date:

Name of the faculty / Observer:

Sl.No	**Points to be considered**	**Poor** *0*	*Below Average* *1*	*Average* *2*	*Good* *3*	*Very Good* *4*
1.	*Interest shown in selecting topic*					
2.	*Appropriate review*					
3.	*Discussion with guide and other faculty*					
4.	*Quality of protocol*					
5.	*Preparation of Proforma*					
	Total Score					

ANNEXURE - 7

CHECK LIST 7

CONTINUOUS EVALUATION OF DISSERTATION WORK

Name of the Trainee: **Date**

Name of the Faculty:

Sl. No.	**Items for observation during presentation**	**Poor**	*Below Average*	*Average*	*Good*	*Very Good*
		0	*1*	*2*	*3*	*4*
1.	*Periodic consultation with guide / co- guide*					
2.	*Regular collection of case material*					
3.	*Depth of Analysis / Discussion*					
4.	*Department presentation of findings*					
5.	*Quality of final output*					
6.	*Others*					
	Total score					

ANNEXURE - 8

CHECK LIST 8

OVERALL ASSESSMENT SHEET

Name of the College: Date:

Check list no	***Particulars***	***0***	***1***	***2***	***3***	***4***
1	***Clinica lwork***					
2	***Clinical presentation***					
3	***Seminars***					
4	***Journal review***					
5	***Teaching skill***					
6	***Dissertation work***					
	TOTAL					

0- Poor 1- Below average 2- Average 3- Good 4- Very good

Signature of HOD Signature of Principal

ANNEXURE - 9

TABLE 1

ACADEMIC ACTIVITIES ATTENDED

Name:

Admission Year: **College:**

Date	**Type of activity - Specify Seminar, Journal club, Presentation, UG teaching**	**Particulars**

☆

LOG BOOK

TABLE 2

ACADEMIC PRESENTATIONS MADE BY THE TRAINEE

Name :

Admission Year:

College:

Date	**Topic**	Type of activity - Specify Seminar, Journal club, Presentation, UG teaching

LOG BOOK

TABLE 3

DIAGNOSTIC AND OPERATIVE PROCEDURES PERFORMED

Name

Date	*Name*	*OP No.*	*Procedure*	*Category* *O, A, PA, PI*

Key:

O - OBSERVED

A - ASSISTED A MORE SENIOR SURGEON

PA - PERFORMED PROCEDURE UNDER SUPERVISION

PI - PERFORMED INDEPENDENTLY

APPENDIX 111 - FINAL EXAMINATION ELIGIBILITY FORM

(To be filled up the candidate)

☆

Name of the candidate :

Date of Joining :

Identification number or

registration number

of university :

Course :

Institution :

Eligibility criteria :

Sl No	Parameter	Details	Proof enclosure
1.	Attendance	1st year (minimum 80%) 2nd year(minimum 80%) 3rd year(minimum 80%)	
2.	Thesis	Approved/Not Approved by the University	
3.	Log book	Successfully completed and submitted	
5.	Conferences attended	Number and category : Number of presentations:	
6.	Publications	Number published: Number submitted:	

All the informations provided above are true to the best of my knowledge and if found contrary, I am clearly aware that strict disciplinary actions will be initiated including debarring from examination.

Date Signature of the candidate :

Place Name of the candidate :

Countersigned by:

Faculty as guide:

☆

Name:

Designation:

APPROVAL OF HEAD OF THE DEPARTMENT

I , Dr……, herewith approve that the above candidate is eligible to appear for the final examination as per the documentary evidences provided and best of the knowledge and documents of the department.

Date

Place

Signature :

Name :

Designation :