Passed by Academic Council (Resolution No. 355/2006) dtd. 30/05/2006, subject to Uniformity in the Examination pattern.

BOARD OF STUDIES MEDICAL FACULTY(P.G.EDUCATION) MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES NASHIK-422004.

GOAL

1. **To develop competent specialist and medical teachers who can appreciate health needs of the community, perform professional obligations observing ethics and keeping in view the objectives of national health policy at various levels of health care delivery system as well as be aware of contemporary and recent developments in the concerned discipline and updating with latest advances.**

A) General suggestions .

i) Uniform nomenclature – it is unanimously decided that the nomenclature of Post graduate degree and diploma should be broad based. (either Respiratory Medicine / Pulmonary Medicine) eg. MD (Branch V) Respiratory Medicine,
Diploma in Respiratory Medicine (DRD) or Diploma in Pulmonary Medicine.

ii) Duration -PG Diploma should be of two years duration & PG degree should be of three years duration

iii) Affiliation- The department of a Medical College / Institution should be affiliated. It should be confirmed/ approved and then the teacher functioning in approved department should be recognized.

a. Criteria for affiliation-

- Institution should be first affiliated to university as per laid down norms under 11.2 minimum requirements for PG institution (M.C.I).
- Department on clinical side should have:

1. No. of units – (at least one)

2. Teaching component – teacher should posses the qualifications and experience prescribed by Medical Council of India

Total teaching experience in the subject of 8 years for which recognition is sought out of which at least five years as lecturer or Asst. Prof.

a) HOD Professor (preferably either recognized or eligible to be recognized for PG teacher ship)

b) Unit head – Prof./ Addl. Prof / Asso. Prof. (preferably either recognized or eligible to be recognized for PG teacher ship) if there is one unit it should be headed by Professor only but second or subsequent additional unit may be headed by either Prof ./ Addl. Prof/ Asso. Prof.

c) Other faculty – at least one more qualified teaching faculty (preferably either recognized or eligible to be recognized for PG teacher ship)

Any PG teacher can simultaneously be recognized for MD and PG diploma and can enroll students for both. In addition their teachership should be accorded permission for DNB (National Board of examinations) , Diploma / fellowship of college of Physicians and Surgeons Mumbai, along with certification / fellowship courses that are likely to be started by MUHS in the light of paucity of registration available for Maharashtra State students.

d) Bed strength – minimum 30 sanctioned beds in an indoor unit (at least one unit) For MD / MS and minimum 20 sanctioned beds in an indoor unit for PG Diploma if recognition is for both MD & PG Diploma minimum 30 sanctioned beds in an indoor unit (at least one unit) required.

e) Residents – minimum one resident per 10 beds- (3-residents per 30 beded unit) They are name as Junior Residents for broad specialty JR I (first year) JR II (second year) JR III (third year) Fourth year residency may be adopted to complete three years teaching experience to fulfill eligibility criteria for lecturer post. This post should only be given to PG degree qualified resident.

One teaching unit should have minimum two qualified teaching faculty (preferably either recognized or eligible to be recognized for PG teacher ship)

f) Other staff :

In addition to teaching faculty staff the strength of technical paramedical staff shall be as per the staff strength prescribed for admitting 50 – 100 – 150 or multiple of 100 MBBS admissions regulations

G. Enrolment :

Each PG teacher can enroll only one student for MD / MS per year and one PG Diploma students per year.

4) Laboratory facilities:

a) Central Lab facilities -for training Postgraduate students should be available preferably computerized automatic analytic type equipments be available.Central Direct microscopy, Fluorescent microscopy, Culture & Susceptibility for organism inclusive of AFB be available

b) Equipments -should be functional throughout the year quality control and accuracy be monitor periodically. The facilities should be updated in lieu of the advancement in knowledge, technology and research.

c) Central Biomedical waste management is mandatory.

5) Radiology :

Conventional, Ultrasound, Spiral CT/ Multislice CT, MRI, 2D Echo, Colored venous and arterial Doppler, CT guided Biopsy are few of the facilities that should be available. Further as per the advancement in our knowledge the facilities should be updated.

Department as well as Central **Medical Record Section** should be available (preferably computerized).

6)Library:

Department as well as Central medical library in possession of standard text books, index journals, year books, recent advances periodical should be available.

At least central Library should have PC's with colored laser printer, Internet facilities, Fax, Xeroxing machine along with educational CD's.

7) Equipments:

Each unit of the department should have clinical/ procedure room with facilities for pleural tapping and biopsy, FNAB, Pulse oximeter, multifunction bed, trolleys, with at least four X-ray and scanplate mountable viewing box, four to five nebulizers.

a)Pulmonary Function Laboratory having facilities to perform spiormetry, Airways resistance and conductance, diffusion study, Bronchial challenge test, allergy-testing facility with emergency management arrangement, six minutes walk work test facilities.

b)Bronchoscopy room having flexible fibroptic bronchoscope, with standard accessories, leakage tester, monitor , CCTV camera, recording facilities, nebulizer scope sterilization tray central cupboard to hang the scope with punch biopsy, brush biopsy, channel cleaning forceps, suction and oxygen ports or portable machine and cylinder.

c)Respiratory critical care/ high dependency ward: to take care of seriously/ critically ill patients. Preferably at least four bedded ward having facilities of centralized oxygen and suctioning Non – invasive/ invasive ventilators and different types of masks and oxygen canulae. If departmental critical center is not available hospitals central intensive care unit must be available with easy access to the patient from the department.

d) Sleep Laboratory:

1. Polysomnography machine with adequate channels, SPO2 measurement having facilities for up gradation
2. Monitoring treatment modality with unilevel / bilevel positive airway pressure equipment.
3. Separate room with proper ventilation

CURRICULUM
(syllabus)
BASIC SCIENCES

I - ANATOMY OF THE LUNG & DEVELOPMENT & GENETICS OF LUNG DISEASES.

II - PHYSIOLOGY :

- Respiratory Mechanics
- Physiology of Respiration & Ventilation.
- Physiological basis of pulmonary function testing & arterial blood gases.
- Acid based disturbances
- Physiology aspects related to mechanical ventilation
- Physiology related to endocrine aspects of lung
- Sleep physiology
- Patho-physiology of all disorders pertaining to pulmonary medicine.

III - PUBLIC HEALTH & EPIDEMIOLOGY:

- Epidemiological aspects of major respiratory and public health problems like tuberculosis, asthma, interstitial lung disease & occupational & environmental disorders.

IV - PULMONARY REHABILATION

V -SURGICAL ASPECTS;

- Surgical interventions in various pulmonary disorders including trauma, infections & lung transplantation & minimally invasive interventions.

VI- MEDICO-LEGAL ASPECTS:

- Principles of care for patient requiring mechanical ventilation.
- Long term oxygen therapy
- Compensation (occupational lung disorders)
- Fitness & disability evaluation.
- Personal Protective measures for occupational health, biosafety guidelines for medical equipment & waste disposal.
- Human Rights, ethical aspects, consent for procedures/newer drug development. Aspects related to medical procedures & interventions performed in various pulmonary disorders.

VII- RECENT ADVANCES :

- Drug development in respiratory medicine.
- Sleep Medicine
- Invasive diagnostic techniques
- Lung in extreme conditions.

VIII- INFECTIONS :

- Tuberculosis (pulmonary & extrapulmonary)
- Opportunistic infections related to immunocompromised state & other infections in immunocompetent individuals.
- Infections related to systemic illnesses

IX - ENVIRONMENTAL MEDICINE RELATED TO PULMONARY MEDICINE WITH SPECIAL REFERENCE TO AIR POLLUTION & OCCUPATIONAL DISEASES.

X - PULMONARY CRITICAL CARE ASPECTS :

XI -CONVENTIONAL CHEST RADIOLOGY & LUNG IMAGING

XII - PULMONARY CIRCULATORY DISORDERS.

XIII - DISEASES OF AIRWAYS

XIV - NEOPLASTIC DISEASES

XV - DISEASES OF MEDIASTINUM

XVI - INTERSTITIAL LUNG DISEASE

XVII - PULMONARY INFECTIONS.

XVIII - PROBLEM BASED LEARNING FOR THEORY & PRACTICAL ON EACH ASPECT (REFERENCE : W.H.O.) :

- Cause of the complaint
- Ways to differentiate between possible causes
- Pathophysiological mechanisms responsible for the complaint and clinical conditions.
- Best possible management strategies.
- Prevention of recurrence.

In addition to the above-cited syllabus a student should acquire theoretical knowledge, dissertation, clinical and communication skills as well as training in research methodology.

B) Recognition of textbooks, reference books & journals

a) **Text Books**:
Respiratory Diseases (I & II) - Crofton & Douglas
Pulmonary Diseases & Disorders - A. Fishman
Diseases of Chest (I,II,III &IV) - Fraser & Pare

b) **Reference books:**
Principles of Critical Care - Farokh E. Udwadia
Pulmonary Function Testing - Gregg L. Ruppel
Bronchoscopy -Udaya B. S.Prakash
Principles & Practices of Sleep Medicine - Kryger & Roth
Clinical application of Blood Gases - Barry A.Shapiro
Occupational Lung Disorders - Park & Park
High Resolution CT of the Lung - W. Richard Webb
Surgical Aspects of Tuberculosis - Gibbons
Tuberculosis - Toman

c)**Journals:**
Thorax
American Review of Critical Care & Respiratory Diseases.
Indian Journal of Chest Diseases
European Journal of Respiratory Diseases.
Clinics in Chest Medicine.
Recent Advances in Respiratory Medicine.

C) Pattern of P.G.Degree and Diploma Examinations

(As per Direction No. 01/2008 dtd. 26/05/2008)

Appointment of examiners:

a. There will be two internal examiners and two external examiners (from out of state).

b. If the total number of the candidates are more than 39 then instead of four eight examiners four internal & four external can be appointed.

c.In the event of more than eight candidates the practical examination should be held for more than one day depending upon the number of candidates in the multiples of eight.

d.If a corum of four / eight examiners is not completed than the external examiners can be appointed from the existing list however at no point of time both external examiners will be retired internal examiners empanelled as externals.

e. In case of crisis examination can be carried out with minimum of three examiners of which at least one should be an external examiner with prior permission of M.C.I.

f.. An internal examiner ordinarily be appointed for not more than two terms in succession or with in two years at any turn of the college.

g.examination of MD/ MS and PG diploma can be held in Jan & July Each year .

h. For PG degree and diploma four examiners are to be appointed and the same set of examiners can conduct both MD/ MS and PG diploma in there respective term to void duplication and extra expenses thereof.

i.Same set of examiners should assess dissertations, theory and practical of all the candidates appearing for the same examination.

J.PG students only should be allowed to appear for examination on passing assessment of dissertations by the respective set of examiners.

k.There will be chairman/ convener who is supposed to moderate paper setting and practical examination, submission of result to the university. Such person should essentially be an internal examiner and who will officiate for only one term at the time and not more than one in succession.