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| **Quality Assurance Unit** | **Tanta University**  **Faculty of Medicine** |

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| **Department of Chest Diseases**  **Program Specifications** |
| **Chest Diploma Degree** |
| **2023-2024** |

Chest Diploma Degree, Program Specifications

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| **University: Tanta** | **Faculty: Medicine** | **Department: Chest** |

**A- Basic information**

**1–Program title: Chest Diseases**

**2-Program Code: CHEST 700**

**3- Program coordinator:** …………….

**4-program internal evaluators: prof Mohamed abdelwahab.…..**

**5-program external evaluators: prof hanan elshahat, zagazig university ……..**

**6-Date of approval: …/…/2021**

**7-Departments offering the courses of the program:**

**Anatomy, histology, Physiology, Biochemistry, Pathology, pharmacology, Microbiology, Public Health, Internal Medicine, Tropical Medicine and Infectious Diseases Departments- Faculty of medicine – Tanta University**

**.B\_ professional information**

**1 – Overall program aims**

The purpose of this program is to provide the basis for training in the specialty of Respiratory Medicine to the level of award of a Certificate of Completion of Training. At this level, the doctor should have the knowledge, skills, attitudes and competencies to practice as an independent specialist practitioner, at Consultant level.

**2 – Intended learning outcomes (ILOs):**

**a. knowledge and understanding:**

By the, end of the program the candidate should be able to

a.1. Identify the basic science in relation to respiratory medicine.

a.2. Verify the various causes and pathogenesis of diseases in respiratory medicine.

a.3. Describe the methods of promoting health and preventing diseases in respiratory medicine, including nutrition, exercise, life styles, physiological health, genetic predisposition to disease, sanitation, environmental and work place hazards, preventive pharmacology and immunization.

a.4. Express the clinical manifestations and differential diagnosis of respiratory diseases with an emphasis on the incidence of the different manifestations and their relative importance in establishing the diagnosis, and the early manifestations of serious diseases (malignancy, emergencies).

a.5. Explain the scientific basis and interpretation of diagnostic studies with knowledge of the study / studies of choice in any specific situation and of the accuracy of the study in establishing diagnosis.

a.6. Express the principles, the indications, the relative advantages and disadvantages of various therapeutic modalities including mental health care and behavioral modification, nutritional therapy, pharmacotherapy, surgery, radiotherapy, immunotherapy and physical rehabilitation as applied to common clinical situations in respiratory medicine.

a.7. Express the principles of genetics, the role of genetics in health and disease and the basic principles of gene therapy and genetic counseling in respiratory medicine.

a.8. Summarize the theories and principles that govern ethical decision making in clinical practice and the major ethical dilemmas in respiratory medicine, particularly those that arise at the beginning and the end of life and from the rapid expansion of medical knowledge and technology.

a.9. Identify the relevant airways and pulmonary vascular structures and their relation to each other in order to help the candidate while performing invasive bronchoscopy or non invasive imaging by all imaging techniques (e.g. CT, MSCT pulmonary angiography and MRI

a.10. Identify the physiological basis of control of breathing (central & peripheral).

a.11.Specify information from different types of sample from the lung, view of the pathologist.

a.12. Summarize the classification, mode of action, indications, contraindications, interactions and adverse effects of drugs used in the field of pulmonary medicine especially asthma, COPD and Tuberculosis.

a.13. Outline the WHO International Health Regulations (2005).

a.14. Outline WHO Epidemic and Pandemic Alert and Responses (EPR).

a.15. Define and classify hormonal disorders related to chest diseases.

**b. Intellectual skills:**

By the end of the program the trainee will be able to:

**(b.1.) Data acquisition:**

b.1.1. Obtain and document a complete and a focused medical history for a patient with respiratory disease.

b.1.2. Perform and document a complete and a focused physical and mental status examination for a patient.

b.1.3. Perform an emergency - directed examination for patients with common respiratory emergencies.

b.1.4. Utilize sources of information in addition to the patient interview to augment the medical history. Such sources include family or friends, medical records and other health care professionals.

b.1.5. Identify anatomic landmarks on postmortem specimens.

b.1.6. Interpret results of physiologic tests such as pulmonary function tests, arterial blood gases and electrolyte analysis.

b.1.7. Define the place of bronchoalveolar lavage (BAL) and lung biopsy in the diagnostic work-up of diffuse lung disease.

b.1.8. Take a relevant history of a patient’s medication regimen

**(b.2.) Data analysis and problem solving:**

b.2.1. Interpret patient symptoms and physical findings in terms of their anatomic, pathologic and functional diagnostic significances.

b.2.2. Identify problems, prioritize them, and generate a list of initial diagnostic hypotheses (differential diagnosis) for each problem.

b.2.3. Select the most appropriate and cost effective diagnostic and therapeutic producers for each problem.

b.2.4. Interpret the results of diagnostic procedures.

b.2.5. Use the results of all tests ordered to modify the problem list and the differential diagnosis accordingly.

b.2.6. Combine the clinical and investigational database, with the evidence based knowledge in clinical problem solving.

b.2.7. Assess different cardiac, renal and hepatic diseases and evaluate their impact on the chest.

**(b.3.) Skills related to treatment strategies:**

b.3.1. Recognize patients with immediately life-threatening conditions and institute appropriate initial therapy.

b.3.2. Recognize patients with serious conditions requiring critical care and institute course of management according guide lines available.

b.3.3. Design and apply rational therapeutic strategies for both acute and chronic conditions that take into account the various variables that influence these strategies.

b.3.4. Deal with complications of respiratory diseases.

b.3.5. Identify and manage patients with chronic conditions requiring long term follow-up, rehabilitation, or relief of pain.

b.3.6. Achieve consensus with the patient or the patient's relatives on the treatment plan selected.

b.3.7. Monitor the effectiveness of therapy by identifying clinical and investigative parameters to be used in assessing the patient's response to treatment and re-evaluate management plan accordingly.

**c. Professional and practical skills:**

By the end of the program the trainee will be able to:

Communication skills:

**(c.1.) Patient- doctor relationship**

c.1.1. Apply respect to all patients irrespective of their socioeconomic levels, culture or religious beliefs and use language appropriate to the patient's culture.

c.1.2. Conduct patient interviews that are characterized by patience and attentive listening.

c.1.3. Explain to the patient or the patient's relatives the nature of illness, the diagnostic plan, the treatment options and the possible complications in such a way that is easily understood, answers patient's questions,encourages discussion and promotes the patient's participation in decision making.

c.1.4. Write clear concise patient records: admission sheet, progress notes, physician orders, and referrals for consultation, discharge summary and follow-up notes.

c.1.5. Use appropriate skills and strategies of communication during difficult situations such as giving bad news and dealing with angry patients.

c.1.6. Discuss medical errors or professional mistakes honestly and openly in a way that promotes patient trust and self-learning.

**(c.2.) Relation to collaboration with healthcare professionals**:

c.2.1. Communicate effectively with other health care professionals to maximize patient benefits and minimize the risk of errors.

c.2.2. Respect the role and contributions of other health care professionals regardless of degree or occupation.

c.2.3. Undertake appropriate formal and informal consultations with colleagues and perform appropriate referrals to other health care professionals.

c.2.4. Write a concise and informative report on patient(s) conditions.

c.2.5.Work effectively as a member or a leader of an interdisciplinary team, and acquire the ability to develop and apply management plans for patients in collaboration with the members of the team.

c.2.6. Apply general measures to reduce spread of infection in hospital wards.

**d. General and transferable skills:**

by the end of the program the trainee will be able to

**(d.1.) Life-long learning:**

d.1.1. Show commitment to life-long self-learning.

d.1.2. Use the sources of biomedical information to remain current with advances in knowledge and practice.

d.1.3. Frame a question, search the literature and utilize the obtained information to solve a particular clinical problem or plan management of an individual patient according to the principles of Evidence-Based Medicine.

d.1.4. Know the principles of critical Appraisal of scientific research.

**(d.2.) Ethical behavior:**

d.2.1. Identify alternatives in difficult ethical choices, analyze considerations supporting different alternatives and formulate course of action that takes account of this ethical complexity.

d.2.2. Behave towards patients in a manner consistent with the ideals of profession.

d.2.3. Treat the patient as a person, not a disease, and understand that the patient is a person with beliefs, values, goals and concerns which must be respected.

d.2.4. Respect the patient's dignity, privacy, information confidentiality and autonomy.

d.2.5.Deliver care in a way that will allow the patient to feel he / she has received medical care in a caring, compassionate and human manner.

d.2.6. Maintain honesty and integrity in all interactions with patients, patient's families, colleagues and others with whom physicians must interact in their professional lives.

d.2.7. Maintain a professional image in manner, dress, speech and interpersonal relationships that is consistent with the medical profession's accepted contemporary standards in the community.

d.2.8. Be responsible towards work and in emergency situations.

d.2.9. Advocate the patient's interests over ones' own interests.

d.2.10. Provide care to patients who are unable to pay.

d.2.11. Recognize and effectively deal with unethical behavior of other members of the healthcare team.

d.2.12. The trainee should consider the cost implications of cost benefit of various treatment modalities.

**(d.3.) skills related to social and community context of healthcare:**

d.3.1. Define the Egyptian healthcare system and the community based resources and services and properly-utilize them to provide high quality and cost-effective patient and community care.

d.3.2. Participate actively in health promotion, disease prevention.

d.3.3. Deal appropriately with a specific community health problem.

**3- Academic standards adopted**

Academic standards for postgraduates offered for 2009 by The Egyptian Authority for Quality Assurance and Accreditation for Education (NAQAAE) and adopted by the faculty council for medical degree of diploma in 20/5/2018 was adopted For training course the Egyptian board was adopted

**- Academic standards adopted**

Trainee’s duties and obligations

* Trainees must attend at least 75% of lectures in pulmonology subjects&weekly meetings including clinical rounds, tutorials and journal clubs. They should pass successfully through the first part and the second Exam before being promoted to the third year of training.
* They should be actively involved and fully responsible for patient care including sharing in making decisions about diagnosis and management under supervision of the consultants.
* Their performance will be monitored and evaluated by trainers and a report made of their performance on monthly basis to The Egyptian Fellowship Board.
* All trainees will work as residents in the training specialty and they must fulfill all residents jobs defined by supervisors and trainers
* They should be responsible under supervision for outpatient and in patients' routine work.
* They must take supervised shifts according to the hospitals requirements and regulation.

Specific Requirements and Obligations

**1- Obligations towards the Admitted Patients:**

* The trainees will be responsible for supervised admission of patients from the outpatient department or emergency room.
* They will share in the completion of the following documents under supervision
* Complete history and physical examination form.
* Investigation requests, (laboratory, radiology, pathology, etc.).
* Reporting results of the investigations.
* The plan of management after consultation and approval from supervisors.
* Daily progress notes.
* Order and medication sheets
* Order the necessary diagnostic procedures
* Discussion of the case with the trainer and consultants
* Discharge summaries.
* Sick leaves and medical reports.
* The Trainee should inform the senior staff of any high risk patient admission.

**2- Obligations in the Outpatient Clinics:**

The trainees should attend the general pulmonology outpatient clinics and clinics related to the rotation in different subspecialties as requested by trainers and supervisory staff. They should participate in different patients' interviews and share in management under supervision.

**3- Mandatory Clinical and Academic Activities:**

The trainees shall be required to attend and participate in the mandatory academic and clinical activities of the department. Attendance and participation should not be less than 75% of the total number of activities within any training rotation / period including.

* Daily morning patients' rounds and meetings.
* Clinical round presentation, at least once weekly to cover various topics, problems, research, etc.
* Journal club meeting at least once monthly
* Clinico-pathological meeting, at least once monthly
* Interdepartmental Meetings
* Grand staff rounds

**4. The Log Book:**

The trainees must keep and update The Log Book where they record all activities and skills performed and learned during the training program. The activities should be dated and categorized to whether been performed by the trainee him/herself or as an assistant or participant. Each activity registered in the Log book should be counter signed by the trainer and finally the educational supervisor. The Trainer and educational supervisor shall sign the completed Log Book.

5. Before the completion of the training program, the trainee should have completed satisfactorily the rotations described in the structure of the program and performed him/herself and assisted in the various requested procedures.

6. Confidentiality and ethics

The trainee shall maintain the confidentiality and ethics of the medical profession. He shall maintain integrity and health relations with patients, their relatives, the medical, nursing and administrative staff.

**4 – Program structure and content:**

**curriculum structure and content:**

**4-a- Program duration: at least 24 month *( 4 courses [semesters] each semester's duration is 16 weeks)*** from registration= 36 credit hours .

* **First Part:** 9 credit-hours In one semester .

[7 credit-hour obligatory , 1 credit-hour elective , 1 credit-hour scientific activity ]

* **Second Part:** 27 credit-hours

Divided equally to 3 courses [semesters]

(each semester 9 credit-hours = 7 credit-hour obligatory , 1 credit-hour elective , 1 credit-hour scientific activity )

**4-b- Program structures:**

The following points have to be covered:

**First Part: 9 credit-hours = as one semester :**

[7 credit-hour obligatory , 1 credit-hour elective , 1 credit-hour scientific activity ]

**The following points have to be covered:**

1. **Anatomy & embryology & Histology = 1** credit-hours .**CHEST 7001**
2. **Physiology , Biochemistry & Public health, Prevention and social medicine = 2** credit-hours . **CHEST 7002**
3. **Pathology , Pharmacology , Microbiology = 2** credit-hours . **CHEST 7003**
4. **Internal medicine = 2** credit-hours . **CHEST 7004**

| **First semester** | |
| --- | --- |
| **Anatomy** | |
| Embryology and development of airways, lung and diaphragm | |
| Surface anatomy of lung fissures, pleura, heart & vascular structures  CHEST WALL: Skeleton , joints, muscles,vessels,nerves,and Movements. | |
| Lung and bronchial tree - Respiratory passages: anatomy and development of nose, paranasal sinuses ,pharynx,  larynx, trachea ,bronchi, bronchopulmonary  segments and structures of a single segment  For all vasculature ,innervation and lymph  Drainage | |
| Pleura anatomy ,development and  Anomalies | |
| Diaphragm and respiratory muscles and movements.- Anatomical basis of intercostals nerve block and aspiration of the chest. | |
| Detailed anatomy of Mediastinum (including trachea &oesophagus) | |
| Pericardium, heartand Pulmonary vessels | |
| Pulmonary circulation (and incidence of congenital pathological shunts.) | |
| Nerves of the thorax .  -Anatomy of the sensory pathway from the thorax( anatomy of chest pain). | |
| Lymphatic drainage of the thorax | |
| **Histology** | |
| -Introduction  2-Cytology and cytogenetics  3-Epithelium  4- Blood and Haemopoeisis  5- Muscle tissue  6- Cardio vascular system  7- Lymphatic system  8- endocrine system  9- Respiratory system | |
| **Physiology** | |
| Physical properties of the lungs | |
| Mechanics of breathing | |
| Transport of respiratory gases | |
| Regulation of respiration & types of breathing | |
| Pulmonary circulation and pulmonary hypertension | |
| Ventilation / perfusion ration | |
| Hypoxia and cyanosis | |
| Acid – base balance | |
| Water and electrolyte Regulation | |
| Blood elements (RBCs, WBCs and platelets) | |
| Capillary circulation, body fluid formation and edema | |
| Glucose homeostasis | |
| **Biochemistry** | |
| Introduction to metabolism | |
| Carbohydrate metabolism | |
| Function of carbonic anhydrase | |
| Hormones | |
| Mineral metabolism | |
| Vitamins (daily requirement and deficiency) . | |
| Free radicals and anti-oxidants | |
| Food chemistry | |
| **Public Health** | |
| Epidemiology:  - General epidemiology of communicable diseases.  - Epidemiology of tuberculosis.  - Prevention and control of respiratory diseases esp. tuberculosis. | |
| Occupational health, Communication and health behavior: | |
| Demography and vital statistics related to chest diseases | |
| **Pathology** |
| Information from different types of sample from the lung, view of the pathologist | |
| Inflammation / repair | |
| Infective lung diseases – pathological view | |
| Specific infection | |
| Granuloma | |
| Approaches to idiopathic interstitial pneumonias, useful points for clinicians – pathological view | |
| Pathology of pre-neoplasia and common lung cancers | |
| Pathology of rare tumours | |
| Environmental and occupational pulmonary diseases – pathological view | |
| Airway diseases – pathological view | |
| Cyotology | |
| Pathology issues in respiratory intensive care | |
| Immunopathology | |

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| **Pharmacology** | |
| Antibiotics use and misuse in pulmonary infection | | |
| Specific Anti tuberculous treatment | | |
| Anti-viral drugs | | |
| Anti-fungal drugs | | |
| Drugs for treatment and Prophylaxis of asthma | | |
| Drugs used in COPD. | | |
| Steroids (phobia) | | |
| **Microbiology** | |
| Community acquired pneumonia, Hospital acquired pneumonia, ventilator associated pneumonia, pneumonia in immuno-compromized patients and fatal pneumonia | |
| Fungal pulmonary infection | |
| Mycobacteria tuberculosis and atypical mycobacterial pulmonary infection | |
| Interplay between immunity and hypersensitivity in pulmonary tuberculosis | |
| Viral pulmonary infection | |
| **Internal Medicine** |
| Systemic and pulmonary hypertension |
| Rhumatic heart diseases |
| Ischemic heart diseases |
| Congenital heart diseases |
| Pericardial effusion and constrictive pericarditis |
| ECG, Echocardiography and exercise testing |
| Intervsional cardiac procedures |
| Diabetes and diabetic coma |
| Thyrotoxicosis, hypothyroidism and other hormonal disturbances with special reference to chest diseases |
| Renal failure |
| Liver cell failure |
| Collagen diseases |

**Second Part:** 27 credit-hours

1. Divided equally to 3 semesters ie. 2nd , 3rd ,4th courses [**CHEST 7005, 7006, 7007]**

(each semester 9 credit-hours = 7 credit-hour obligatory , 1 credit-hour elective , 1 credit-hour scientific activity )

**2nd semester [ course ]** : **CHEST 7005**

**The following points have to be covered:**

| **Theoretical :** |  |
| --- | --- |
| Asthma | The Biology of Asthma .  Epidemiology, Pathophysiology, and Pathogenesis  Aspirin- and Exercise-Induced Asthma  Asthma: Clinical Presentation and Management  Allergic-BronchopulmonaryAspergillosis (Mycosis) |
| COPD | Pathologic Features of Chronic Obstructive Pulmonary Disease: Diagnostic Criteria and Differential Diagnosis.  Epidemiology, Pathophysiology, and Pathogenesis  Clinical Course and Management. |
| other airway diseases | * Upper Airway Obstruction in Adults * Bronchiectasis * Cystic Fibrosis * Bronchiolitis * Bullous Disease of the Lung. |
| Smoking  Skin testing | cessation /respiratory disease prevention  (tuberculin and allergy tests) |
| Respiratory infections excluding tuberculosis and non-tuberculous mycobacterial diseases | Bacterial pneumonia  Community acquired pneumonia  Nosocomial Pneumonia.  Health care associated pneumonia.  Ventilator associated pneumonia.  Viral Infections of the Lung and Respiratory Tract  Protozoan Infections of the Thorax  Helminthic Diseases of the Lungs |
| Tuberculosis (TB) | Epidemiology, Prevention, and Control of Tuberculosis  The Microbiology, Virulence, and Immunology of Mycobacteria  Clinical Presentation and Treatment  Mycobacterial Infections and HIV Infection  extrapulmonary TB and non-tuberculous (opportunistic) mycobacterial diseases |
| **Pulmonary Radiology** | Principles of chest X-ray physics,  Plain X-ray chest (normal CXR)  Plain X-ray chest (Abnormalities in CXR)  Ultrasound,  CT , CT Chest (normal)  CT Chest (abnormalities )  CT Chest (high resolution and multi slice)  CT angiogram,  Ventilation / Perfusion (Radio active isotope) scan  MRI |
| **Bronchoscopy** | Background / introduction  Indications and contraindications of bronchoscopy  Evaluation, and Premedications  Monitoring and post-bronchoscopy evaluation  Normal findings via bronchoscopy  Abnormal findings via bronchoscopy  Interventional bronchocsopy  Rigid bronchoscopy |

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| **Practical :** |
| **Physical examination** |
| History taking from patient |
| Physical examination |
| Appropriate investigations |
| Formulating an effective management plan |
| **Dysponea** |
| Classification of Dyspnoea |
| Causes of breathlessness |
| Differentiate cardiac, respiratory, neuromuscular and metabolic causes |
| pathogenesis of causes of dyspnea |
| management / treatment of dyspnea |
| Pharmacology of drugs used in dyspnea |
| Relevant guidelines for management of dysponea |
| **Cough** |
| Causes of cough |
| How to formulate an appropriate differential diagnosis |
| Appropriate investigation of cough |
| ENT causes of cough |
| Management/treatment of cough linked to underlying diagnosis |
| Pharmacology of drugs used for treatment of cough |
| Relevant guidelines for management of cough |
| Causes of cough with normal & abnormal X-ray |
| **Haemoptysis** |
| Causes of haemoptysis |
| How to assess severity and formulate diagnostic strategy |
| How to formulate management plan, appropriate to degree of urgency |
| Need for interventional radiology/surgery |
| Relevant guidelines |
| **Chest Pain** |
| Causes of chest pain |
| Pathogenesis of chest pain |
| Differential diagnosis of causes of chest pain |
| Investigation (including ultrasound, closed and CT-guided pleural biopsy and medical thoracoscopy, among other investigations) |
| Pharmacology of drugs used in chest pain |
| Treatments and Management of chest pain |
| Relevant guidelines |
| **Bronchial asthma** |
| **COPD** |
| **Bronchiectasis and suppurative lung diseases** |
| **Pneumonia** |
| **Pulmonary & extra pulmonary tuberculosis** |

**3rd semester [course] CHEST 7006**

**The following points have to be covered**

| **Theoretical** |  |
| --- | --- |
| Occupational lung diseases | Occupational Lung Disorders: General Principles and Approaches,  Asbestos-Related Lung Disease,  Chronic Beryllium Disease ,Hard-Metal Lung Diseases, Coal Workers’ Lung Diseases and Silicosis,  Byssinosis  Occupational Asthma and Industrial Bronchitis |
| Environmental lung diseases | Indoor and Outdoor Air Pollution.,  High-Altitude Physiology and Clinical Disorders  Diving Injuries and Air Embolism, |
| Immunological and interstitial diseases.. Diffuse parenchymal lung diseases and orphan lung diseases | * Interstitial Lung Disease: A Clinical Overview and General Approach , * Systemic Sarcoidosis , * Idiopathic Pulmonary Fibrosis , * Hypersensitivity Pneumonitis, * Radiation Pneumonitis,   Pulmonary Manifestations of the Collagen Vascular Diseases. |
| Allergic and eosinophilic lung diseases excluding asthma | * The Eosinophilic Pneumonias |
| Pleuro-pulmonary manifestations of systemic/extrapulmonary disorders | * The relation between lung and GIT. * The relation between lung and Kidney * The relation between lung and heart.   The relation between lung and GIT. |
| Respiratory manifestations of immunodeficiency disorders | * Pulmonary manifestations of cancer patients.   Pulmonary manifestations of Human Immunodeficiency Virus |
| Pulmonary vascular diseases | * Pulmonary Circulation * Pulmonary Hypertension and Cor- Pulmonale. * Pulmonary Thromboembolic Disease.   Pulmonary Vasculitis . |
| Pleural diseases | Non-Malignant Pleural Effusions  Malignant Pleural Effusions  Pneumothorax  Malignant Mesothelioma and Other Primary Pleural Tumors |
| Pleural procedures | * **Pleural biopsy and Thoracoscopy** |

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| **Practical** |
| **Pleural effusion & empyema** |
| **Pneumothorax** |
| **Pulmonary embolism** |
| **Pulmonary hypertension and corpulmonale** |
| **Interstitial lung diseases especially IPF and sarcoidosis** |
| **Pulmonary manifestations of systemic diseases** |
| **Pregnancy and different chest diseases** |
| **Pulmonary circulation** |
| **Assessment of intra-pleural and airway pressures** |

**4th semester: course CHEST 7007 The following points have to be covered**

| **Theoretical** |  |
| --- | --- |
| Cancer lung | * The Solitary Pulmonary Nodule: A Systematic Approach * Non–Small Cell and small cell Lung Carcinoma * Primary Lung Tumors Other Than Bronchogenic Carcinoma: Benign and Malignant   Extrapulmonary Syndromes Associated with Lung Tumors |
| Diseases of the chest wall, respiratory muscles and diaphragm | * Neuromuscular Diseases of the * Chest Wall And Effects of Neuromuscular Diseases on Ventilation   Management of Neuromuscular Respiratory Muscle Dysfunction |
| Mediastinal diseases | * Congenital Cysts of the Mediastinum: Bronchopulmonary Foregut Anomalies   Acquired Lesions of the Mediastinum: Benign and Malignant |
| Genetic and developmental disorders | Genetic and developmental disorders |
| Lung transplantation | Lung transplantation |
| Acute Respiratory failure | * Respiratory Failure: An Overview * Acute Respiratory Distress Syndrome: Pathogenesis, Clinical Features, Management, and Outcomes   Acute Lung Injury and the Acute Respiratory Distress Syndrome: |
| Respiratory pump failure | The Pathogenesis of Hypercapnia RF  Respiratory Failure in Patients with Lung and Chest Wall Disease. |
| Sleep related breathing disorders | * The Stages of Sleep and Changes in the Cardiorespiratory System During Sleep * Sleep Apnea Syndromes   Differential Diagnosis and Evaluation of Sleepiness |
| Intensive care and high dependency care units | * Oxygen Therapy and Oxygen Toxicity * Hemodynamic and Respiratory Monitoring in Acute Respiratory Failure * Principles of Mechanical Ventilation * Treatment of Agitation in ICU |
| Pulmonary exercise physiology and pulmonary rehabilitation | * Exercise * pulmonary rehabilitation |
| Home care (hospital at home and early discharge schemes) | * Home care (hospital at home and early discharge schemes) |
| Palliative care | * Palliative care |
| Patient oriented approach according to symptoms and signs | * Patient oriented approach according to symptoms and signs |
| Psychological factors and quality of life in respiratory diseases | * Psychological factors and quality of life in respiratory diseases |
| Respiratory epidemiology | * Respiratory epidemiology |
| Pulmonary Function testing | Ventilatory functions ,  Non respiratory functions of lung Respiratory muscle function  Spirometer and lung volumes  Airway resistance and conductance  Lung compliance (static and dynamic)  Lung diffusion  O2 and CO2 carriage by blood and their dissociation curves  Chloride shift phenomenon  Acid – base balance  Interpretation of ABGs |
| Pediatric pulmonary Medicine |  |

| **Practical** |
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| **Pulmonary Function testing** |
| * **Ventilatory functions** * **Non respiratory functions of the lung** * **Respiratory muscle function** * **Airway resistance and conductance** * **Lung compliance (static and dynamic)** * **Lung diffusion** * **Interpretation of spirometery** |
| **Acid – base balance**   * **Interpretation of ABGs** * **Critically ill patient with acid – base disturbance** * **O2 and CO2 carriage by blood and their dissociation curves** * **Chloride shift phenomenon** * **Hypoxia** |
| **Pulmonary exercise physiology** |
| **Acute respiratory failure** |
| **Respiratory devices** |
| **Sleep related breathing disorders** |
| **Chest Cases prepared for pulmonary or non-pulmonary surgery** |

**5-Courses included in the program:**

| **Scemester** | **Code** | **Course Title** | **Program ILOs** |
| --- | --- | --- | --- |
| **Covered** |
| 1st  scemester | CHEST 7001 | Anatomy, Embryology and Histology | a.9., b.1.5 |
| CHEST 7002 | Physiology , Biochemistry Public Health | a.10, b.1.6.  a.11, a.12, b.1.7., b.1.8 |
| CHEST 7003 | Pathology, Bacteriology , pharmcology | a.13, a.14  c.1.2.6 |
| CHEST 7004 | Internal Medicine | a.15, b.2.7 |
| 2nd , 3rd , 4th  Scemester | CHEST 7005 CHEST 7006  CHEST 7007 | Chest Diseases | a.1.-15., b.1., b.2., b.3., c.1., d.1., d.2. & d.3. |

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| **program ILOs versus courses matrix** | | | | | | | | | | | | | | | | | | | | | | | |
| **ILOS** | | | | | | | | | | | | | | | | | | | | | | | |
| **d** | | | **c** | | **b** | | | **A** | | | | | | | | | | | | | | |  |
| **3** | **2** | **1** | **2** | **1** | **3** | **2** | **1** | **15** | **14** | **13** | **12** | **11** | **10** | **9** | **8** | **7** | **6** | **5** | **4** | **3** | **2** | **1** |  |
|  |  |  |  |  |  |  | \* |  |  |  |  |  | \* |  |  |  |  | \* | \* | \* |  | \* | **Anatomy and histology** |
| \* | \* |  |  | \* |  |  |  |  | \* | \* |  |  | \* |  |  |  |  | \* | \* | \* |  | \* | **Public health** |
|  |  |  | \* |  | \* | \* | \* |  |  |  | \* | \* | \* |  |  |  |  | \* | \* | \* |  | \* | **Pathology&bacteriology** |
|  |  |  | \* |  | \* | \* | \* |  |  |  | \* | \* | \* |  |  |  |  | \* | \* | \* |  | \* | **pharmacology** |
|  |  |  |  |  |  | \* | \* |  |  |  |  |  | \* |  |  |  |  | \* | \* | \* |  | \* | **Physiology and biochemistry** |
|  |  |  |  |  |  | \* | \* | \* |  |  |  |  | \* |  |  |  |  | \* | \* | \* |  | \* | **Internal med.** |
| **\*** | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | \* | **Chest diseases** |

**Academic Reference Standard (ARS)**

| **program ILOs versus courses ARS** | | | | | | | | | | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **D** | | | **c** | | **b** | | | **A** | | | | | | | | | | | | | | | **ILOs**  **ARS** |
| **3** | **2** | **1** | **2** | **1** | **3** | **2** | **1** | **15** | **14** | **13** | **12** | **11** | **10** | **9** | **8** | **7** | **6** | **5** | **4** | **3** | **2** | **1** |
|  |  |  |  |  |  |  |  | \* |  |  | \* | \* | \* |  |  |  | \* | \* |  | \* | \* | \* | a1 |
|  |  |  |  |  |  |  |  |  | \* | \* |  |  |  |  | \* | \* | \* | \* |  |  |  |  | a2 |
|  |  |  |  |  |  |  |  |  | \* | \* |  |  |  |  |  | \* |  |  |  |  |  |  | a3 |
|  |  |  |  |  | \* |  |  |  |  |  | \* |  |  |  |  |  |  |  |  | \* |  |  | a4 |
|  |  |  |  |  |  |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | b1 |
|  |  |  |  |  |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | b2 |
|  |  |  |  |  |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | b3 |
|  |  |  |  |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | b4 |
|  |  |  |  |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | b5 |
|  |  |  | \* | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | c1 |
|  |  |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | c2 |
|  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | d1 |
|  |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | d2 |
| \* |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | d3 |
|  |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | d4 |
|  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | d5 |
|  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | d6 |
|  |  | \* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | d7 |

**6. Regulation for progression and program completion**

The general rules and regulations of assessment approved by Tanta University. In addition to the successful completion of the training program, all candidates must successfully pass two exams in order to get the certificate.

* **First Part Exam:**

Candidates are allowed to sit for the first part exam after:

1. Fulfill at least 75% of attendance of 1st semester
2. Passing successfully semesters exams.

* The first part exam is a written, practical and oral exam..
* **Second Part Exam:**

Candidates are allowed to sit for the second part exam after:

1. Passing successfully the first part exam.
2. Fulfill at least 75% of attendance of both 2nd, 3rd, 4thsemesters'
3. Passing successfully all scemesters exams .

* The second part exam is a written, oral and clinical exam.

**The structure of the examination:**

* **The First Part Exam:**
* It aims to test candidate’s knowledge and intellectual skills in the applications of basic sciences that are related to the field of Pulmonary Medicine.
* The examination consists of **4 written papers:**
* **3 Hours each in 4 days**, short questions, multiple choice questions with a single best answer (problem solving question).
* Clinical, practical and oral exams will be conducted also according to the general rules of Tanta Faculty of Medicine.
* One of the staff members of Chest Department will share in the written, oral or practical exam of each specialty.
* **The Second Part Exam:**
* It aims to test candidates’ knowledge and skills in Pulmonary Medicine. In this exam, the entire curriculum will be covered.
* The examination consists of written, Clinical and Oral exams

**1- Witten exam: two papers:** (3 hours each).

All papers are in Problem solving, MCQ format with one best correct answer and short essay questions. They are covering the whole Pulmonary Medicine curriculum.

**2- clinical exam:**

Clinical exam is composed of the following components:

**OSCE:**

OSCE exam is composed of cases with written answers from all candidates on specific clinical findings followed by discussion by at least 2 examiners.

**Short and Long Cases Exam:**

The clinical exam remains the most important part of the examination as the long case evaluate the potential performance of the candidate in clinical practice while short case assess clinical examination and interpretation skills.

Each candidate is requested to see one short and one long case.

Marks are given according to a predetermined weighting of the components of the exam.

**3-Oral examination:**

Composed of oral two panels and traces panel. The oral exam is the exam that tests the candidates’ ability to manage patients and explores his/her competencies in making an accurate diagnosis. It also assesses his attitudes and interpersonal communication skills. It is based on a set of topics with opening and supplementary questions. The question’s cards are prepared in advance together with expected ideal answer and allocated marks. This allows a good objective basis for marking.

The candidate usually rotates through two oral committees, each committee is composed of at least two examiners and cover two Pulmonary Medicine domains. Each examiner has 10-15 minutes with each candidate (40-60 minutes) for the whole oral exam.

The tracing exam is composed of cases presented to all candidates in the same time through data projector in a suitable room. The slides presents the candidates with plain XRC, CT, Pulmonary function reports, Arterial blood gases and other chest tracing. The aim of the exam is to test candidates’ interpretative abilities as related to pulmonary medicine diagnostic and therapeutic situations.

**8-Program assessment and evaluation:**

**Assessment**

|  |  |
| --- | --- |
| **Method of Assessment** | **Percentage** |
| Written examination | 470 degree |
| Oral examination | 210 degree |
| Practical/laboratory work | 220 degree |
| Total | 900 degree |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Course | Code | | Credit hours | Semester | Written | | | Oral | | Clinical | Total |
| First part | Anatomy and Histology | | CHEST 7001 | 1 | First |  | 20 | | 15 | |  | 35 |
| Physiology and Biochemistry Public health | | CHEST 7002 | 2 | First |  | 30 | | 20 | |  | 50 |
| Pathology, Pharmacology Microbiology | | CHEST 7003 | 2 | First |  | 30 | | 20 | |  | 50 |
| Internal medicine | | CHEST 7004 | 2 | First |  | 50 | | 20 | | 20 | 90 |
| Elective courses | |  | 1 |  |  |  | |  | |  |  |
| Scientific activities | |  | 1 |  |  |  | |  | |  |  |
| Second part | Courses on Chest Diseases | CHEST 7005 | | 7 | second |  | 2 papers:  Paper 1: 170  Paper 2:  170 | 135 | | 100 | | 675 |
| CHEST 7006 | | 7 | Third |  | |
| CHEST 7007 | | 7 | Fourth | 100 | |
| Elective courses |  | | 3 |  |  |  |  | |  | |  |
| Scientific activities |  | | 3 |  |  |  |  | |  | |  |
| Total |  |  | | 36 |  |  | 470 | 210 | | 220 | | 900 |

**Evaluation**

* Reports of program external and internal evaluators
* Questionnaire to students and stake holders
* Reports of faculty internal auditing system

Will be included in the annual program report , and action plane will be structured accordingly

**Appendix courses specifications**

The ILOs of the course specifications included in the appendix are integral part of this course program.

**9-we certify that all of the information required to deliver this program is contained in the above specifications and will be implemented**

We verify that the above program and the analysis of students and external evaluator opinions are accurate.

Program coordinator and head of department  
name…………………..signature……………….Date……………….

Head of quality assurance unit: name…………………..signature……………….Date……………….