Quality Assurance Unit

TantaUniversity
Faculty of Medicine

Department ofChest

Course Specifications
(1st part, 1stsemester)

Chest Diploma Degree

2015-2016

Chest Diploma Degree Course Specifications*: 1st part, 1st semester:*

University: Tanta Faculty: Medicine Department: Chest

A- Administrative Information

1. **Course title: Diploma. Chest Diseases**
2. **Department offering the program: Chest Department**

Department responsible for the course: Anatomy, Histology , Physiology, Biochemistry, Public Health, – Tanta University

3. **Course code: CHEST 7001&7002& 7004**
4. **Level: 1st part, 1st semester: 9 credit-hours. (15 weeks)**
5. **No. of Credit / taught hours:**

The course	Obligatory (Theoretical)	Practical	Scientific activity	Elective
Credit hours	4 hours	3 hours	1 hour	1 hours
Taught hours	60 Hours	90 Hours	60 Hours	15 hours

6. **Authorization date of course specification: .../.../2014**

1-Course contents

1. Anatomy & histology(CHEST 7001) = 2 credit hours = 20 taught hours (10 for each)

Department	The course	Obligatory hours	Practical hours
Anatomy and embryology (CHEST 8001)	Credit hours	1/2 hour	1/4 hour
	Taught hours	10 hours	10 hours
Histology (CHEST 8001)	Credit hours	1/2 hour	1/4 hour
	Taught hours	10 hours	10 hours

2. Physiology & biochemistry :(CHEST 7002) = 2 credit hours = 20 taught hours (10 for each)

Department	The course	Obligatory hours	Practical hours
Physiology (CHEST 8002)	Credit hours	1/2 hour	1/4 hour
	Taught hours	10 hours	10 hours
Biochemistry (CHEST 8002)	Credit hours	1/2 hour	1/4 hour
	Taught hours	10 hours	10 hours

3. Public health: (CHEST 7004) = 2 credit hours = 20 taught hours (10 for each)

Department	The course	Obligatory hours	Practical hours
Public Health (CHEST 8004)	Credit hours	2 hours	1 hour
	Taught hours	20 hours	20 hours

1) Anatomy & embryology :

Course specifications of anatomy for chest diploma degree

University: Tanta ***Faculty: Medicine*** ***Department: anatomy***

A-administrative Information

1. **Program title: diploma degree of chest**
2. **Department offering the program: chest Department**
3. **Department responsible for the course: Human Anatomy& Embryology Department and chest department Faculty of medicine.**
4. **Course code:CHEST 7001**

B-Professional Information

1-Overall course aims

- To provide a core body of scientific knowledge concerning the normal structure of the human body at the level of the anatomical regions and organs relevant to anatomical topics.
- To correlate anatomical facts with their clinical applications

2-Intended learning outcomes (ILOs):

a. Knowledge and understanding:

By the end of the course candidate should be able to:

a1 Describe 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)

a2 . Describe the knowledge derived from the appropriate basic sciences which are relevant to Chest Diseases

3-Course contents

Topics	No. of hours	
	Obligatory	Practical
CHEST WALL: **- Skeleton , joints, muscles,vessels,nerves,and movements.** **- Surface anatomy of the wall, and all structures in the thorax.**	1	1
-Diphragm and respiratory muscles and movements.- Anatomical basis of intercostals nerve block and aspiration of the chest.	1	1
MEDIASTINUM: **- Division, sternal angle and arrangement of its structures.**	1	1
-oesophagus ,anatomy,applied,development and Anomalies	1	1
- Blood vessels,lymph vessels, regional lymph nodes,and lymph drainageof the thoracic structures	1	1
- Pleura and lungs:anatomy ,development and Anomalies	1	1
- Respiratory passages: anatomy and development of nose,paranasalsinuses,pharynx,	1	1
larynx, trachea ,bronchi,bronchopulmonary segments and structures of a single segment For all vasculature ,innervation and lymph Drainage	1	1
- Pericardium,heart and great vessels.	1	1
- Cross sections of the thorax. **-Anatomy of the sensory pathway from the thorax(anatomy of chest pain).**	1	1
Total	10	10

4-Teaching and learning methods:

- illustrated lectures,
- practical sections

5-Student Assessment

- Written examination. One written paper contains multiple long and short questions.a1-a2.
- Oral examination. One sitting (2-3 staff members including in this sitting) a1-a2.

7-List of references

7.1 Course notes

Hand outs of lectures (either soft or hard copies)

7.2 Text book

Human anatomy series produced by the staff members of the anatomy department.

7.3 Recommended books

- Gray's Anatomy
- Last's Anatomy
- Cunningham's manual of practical anatomy
- Atlas of anatomy (Nutter, Grant….etc)
- Fundemental anatomy (Hartwing , Walter Carl 2008)

7.4 Periodicals and web sites

www.innerbody.com
www.instantanatomy.net

8-Other resources/ facilities required for teaching and learning to achieve the above ILOs

Internal TV circuit for displaying anatomy video films and CD movies
Library (delivering text books and computers for achieving anatomy web sites)

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

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

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

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

2) Histology:

Histology for chest diploma degree Course specifications

University: Tanta **Faculty: Medicine** **Department: Histology**

A- administrative Information

1- Course title: Histology for Chest diploma degree

2- Department offering the program: Chest Department

3- Department responsible for the course: Chest and Histology departments

4- Course code:CHEST 7001

5-Authorization date of course specification:

B- Professional Information

1 – Overall course aims

Our course aims to:

- To provide candidate with knowledge concerning the detailed histological structure and ultrastructure of all cellular components, different tissues and systems of human body in addition to its correlation to biological activities.
- To provide candidate with knowledge concerning the detailed histological structure with more details for the respiratory system.
- To provide candidate with knowledge concerning cytogenetics and its role in the diagnosis of different genetic diseases..

2 – Intended learning outcomes (ILOs):

a. Knowledge and understanding:

By the end of the course the candidate will be able to:

a1 Describe the detailed structure and functions of the cytoplasmic and nuclear components with correlation to biological cellular activities.

a2 – Describe the detailed histological structure of different tissues and systems of human body.

a3 - Describe cytogenetics and its role in the diagnosis of different genetic diseases.

b. Intellectual skills:

By the end of the course the candidate will be able to:

b1- Select appropriate histological structures to reveal specific components of cells and tissues.

b2- Predict the cellular or tissue components in different tissues.

b.3 -Relate the composition of each tissue type to its specific functions.

c. Professional and practical skills :

By the end of the course the candidate will be able to:

C1- diagnose different normal tissue structures.

C.2- Write a professional descriptive report related to structure.

c.3- use cytogenetics in the diagnosis of different genetic diseases.

d. General and transferable skills:

By the end of the course the candidate will be able to:

d1- work in a teamwork and cooperate with other colleges

3-Course contents

Topics	No. of hours	
	Theoretical	practical
1-Introduction	1	1
2-Cytology and cytogenetics	1	1
3-Epithelium	1	1
4- Blood and Haemopoeisis	1	1
5- Muscle tissue	1	1
6- Cardio vascular system	1	1
7- Lymphatic system	1	1
8- Respiratory system	2	2
9- Endocrine system	1	1
Total	**10**	**10**

4- Teaching and learning methods

(Illustrated lectures, small groups, tutorial)

5-Student Assessment

5.1… written to assess (a.1,2,3) (in the form of 8 essay qus ,3 draw only Qus and 15 MCQs)

5.2 …oral ….to assess…(b. 1,2,3, , C . 1,2,3, d. 1) (1 sessions each of 2 professors)

6- List of references

6.1 Course notes

6.2 Text books

Junqueira, L. C. and Carneiro, J. (2005): Basic Histology, 11th edition. McGraw-Hill. Medical publishing division.

Fawcett, D. W. (1994): Bloom and Fawcett: A Textbook of Histology, 12th edition. Chapman &Hall, NewYork, London.

Fawcett, D. W. and Jensh, P. R. (2002): Bloom and Fawcett. Concise histology. 2nd edition. Arnold-Hodder headline group.

Cormack, D. H. (2001): Essential Histology. 2nd edition. Lippincott Williams & Wilkins.

Culling, C. F. A.; Allison, R. T. and Barr, W. T. (1985): cellular pathology techniques. 4th edition, Butterworth, London, Boston, Toronto.

-Practical Books

Bancroft, J. D. and Cook, H. T. (1994): Manual of histological techniques and their diagnostic applications. Churchill Livingstone, Edinburgh, London, New York, Tokyo.

7.3 Recommended books

Eroschenko, P. V. (2005): Difiore's atlas of histology with functional correlations.10th edition. Lippincott Company.

Gartner, P. L. and Hiatt, L. J. (2001): Color textbook of histology. 2nd edition. W.B. Saunders Company.

Cormack, D. H. (1997): Essential Histology. J.B. Lippincott Co., Philadelphia.

Cormack, D. H. (1987): Ham's Histology, 9th edition. J.B. Lippincott Co., Philadelphia.

7.4 Periodicals and web sites

- Egyptian Journal of Histology (http://www.ejhistology.eg.net)
- WWW.wikipedia.org/wiki/**Histology**
- www.histology-world.com

8-Other resources/ facilities required for teaching and learning to achieve the above ILOs:

1-Faculty Lecture halls
2- equipped labs with microscopes.
3-Faculty library can be used for projects and textbooks

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

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

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

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

3) Physiology

Physiology for Chest Diploma degree Course specifications

University: Tanta Faculty: Medicine Department: physiology

A- Administrative Information

- **Program title: Physiology for Chest Diploma degree**
- **Department offering the program: chest medicine Department**
- **Departments responsible for the program: physiology &chest medicine Department**
- **Course Code: CHEST 7002**
- **Authorization date of course specification:**

B- Professional Information

1- Overall Course aims:

- Our course aim to offer basis in physiology for the specialty of Respiratory Medicine and should have the knowledge, skills, attitudes and competencies to practice as an independent specialist in chest Medicine

2- Intended learning outcomes (ILOs):

a. knowledge and understanding:

At the end of the course graduate should be able to

a.1. Recognize basic theory and principle of Physiology that help them to understand human disease regarding etiology, diagnosis and control.

a.2. Identify basic clinical physiology in relation to respiratory medicine cardiovascular and autonomic nervous system.

a.3. Recognize the various causes and pathogenesis of diseases in respiratory medicine.

a.4. Identify knowledge of basic defect in physiological control mechanisms that result in disease state.

b. Intellectual skills:

At the end of the course graduate should be able to

b.1.Interpret results of physiologic tests such as pulmonary function tests, arterial blood gases and electrolyte analysis.

b.2.Use the results of all tests ordered to modify the problem list and the differential diagnosis accordingly. .

d. General transferable skills:

At the end of the course graduate should be able to

d.1. Communicate effectively with his colleagues and scientific institutes.

d.2. Use the basic computer skills which serve his career development

d.3. Apply self evaluation and specify his medical educational needs.

d.4. Use different learning resources to get knowledge and information.

d.5. Manage time and practice team working through collaboration with other specialties

d.6. Apply continuous medical education

3- Course contents:

Physiology	Lectures	practical h
Physical properties of the lungs	1	1
Mechanics of breathing	1	1
Transport of respiratory gases	1	1
Regulation of respiration & types of breathing	1	1
Pulmonary circulation and pulmonary hypertension	1	1
Ventilation / perfusion ration	1	1
Hypoxia and cyanosis	1/2	1/2
Acid – base balance	1	1
Water and electrolyte Regulation	1/2	1/2
Blood elements (RBCs, WBCs and platelets)	1/2	1/2
Capillary circulation, body fluid formation and edema	1	1
Glucose homeostasis	1/2	1/2
Total	**10**	**10**

Detailed contents of course topics: (Syllabus contents):

General topics

1- Haemostasis and blood coagulation, anticoagulant, Hemorrhagic disorders.
2- Erythropoiesis and anemia.
3- ABO system &Rh factor, blood transfusion and incompatible blood transfusion .
4- Hypoxia and cynosis.
5- Pulmonary function testes.
6- Homoeostasis.
7- Regulation of gastrointestinal secretion.
8- Normal and abnormal motility of gastrointestinal tract.
9- Water balance, Blood volume, factors affecting and its regulation.
10- Regulation of food intake and obesity.
11- Endocrine functions of suprarenal cortex and its disorders.
12- Thyroid functions and its disorders.
13- Cellular mechanism of actions of hormones.
14- Pain sensation &pain analgesia system.

15- Glucose homeostasis and disturbances.
16- Arterial blood pressure, types and pathophsiological basis of hypertension
17- Heart rate and its regulation.
18- Acid base balance and its functions tests.
19- Ca++ homoeostasis.
20- Mechanisms of transcellular and transcapillary exchange.
21- Control diameters of arterioles.
22- Heamorrage& shock.
23- Coding of sensory information.
24- Functions of the thalamus and thalamic syndrome.
25- Mode of action of autonomic nervous system.
26- Chemical transmitter of autonomic nervous system

Related specialty systems:

1. Cardiovascular system.
2. Respiratory system.
3. Blood.

Related specialty topics:

1. Physical properties of the lungs
2. Mechanics of breathing
3. Transport of respiratory gases
4. Regulation of respiration & types of breathing
5. Pulmonary circulation and pulmonary hypertension
6. Ventilation / perfusion ration
7. Hypoxia and cyanosis
8. Acid – base balance
9. Water and electrolyte Regulation
10. Blood elements (RBCs, WBCs and platelets)
11. Capillary circulation, body fluid formation and edema
12. Glucose homeostasis

4- Teaching and learning methods:

4.1 Illustrated lectures.

4.2 Tutorial is scheduled and previously announced special topics from the curriculum are discussed in the tutorial.

4.3 Assignment to be prepared by the graduate in one of the special topic taught.

4.4 Seminars scheduled and previously announced to facilitate selection identification of their topics.

- Each teaching method is designed to serve different educational goal, and together they provide an appropriate stimulating atmosphere for learning.

5- Student Assessment:

5.1. Written one paper examination 3 parts in the form of short notes (Mention ,Explain ,Define compare etc) the second part is problem solving question and the third part is MCQ questions to assess(a.1, a.2, a.3,a4).
5.2. Oral to assess (a.1, a.2, a.3, a & b.1, b 2 and d.1,2,3,4,5,6)

6- List of references:

8.1. Essential books (Textbooks):

- Guyton &Hall textbook of Human Physiology and Mechanisms of Disease.
- Gannon (review of medical physiology).
- Vander's human physiology.

8.2. Recommended books:

- Applied physiology in intensive care by M.R. Pinsky (Editor), J. Mancebo (Editor), L. Brochard (Editor), Gran Hedenstierna 2009.
- An introduction to human disease: pathology & pathophysiology correlations by Leonard Crowley. Hardcover August 2009.
- Critical pathways in cardiovascular medicine: Second Edition Lippincott Williams & Wilkins.
- Applied physiology: A manual showing functions of the various organs in disease by Frederich Augustus Rhodes.

8.3. Periodicals, Web:

- www.tebawy.5u.com.
- http://bcs.whfreeman.com.
- http://www.bpcc.edu/sciencealliedhealth/humanphysiologylinks.htmlhttp://bio–alive.com/animations/physiology.htm.
- Human physiology from cell to system By: Lauralee Sherwood.

7- Other resources/ facilities required for teaching and learning to achieve the above ILOs:

- All facilities required for teaching are available.

We certify that all of the information required to deliver this course is contained in the above specifications and will be implemented

We verify that the above Course and the analysis of students and external evaluator opinions are accurate. Course coordinator and head of department name……..signature……Date……
Head of quality assurance unit: name……..signature……Date……

4) Biochemistry :

Medical Biochemistry for Chest diploma degreeCourse specifications

University: Tanta ***Faculty: Medicine*** ***Department: Medical Biochemistry***

A- Administrative Information

1- Program title: chest diploma degree

2- Department offering the program: Chest Department.

3- Department responsible for the course: Medical Biochemistry Department.

4- Course code: CHEST 7002

7-Authorization date of course specification:

B_ professional information

1 – Overall program aims

To provide the candidate with professional knowledge, for analyzing routine diagnostic laboratory services in Medical and Clinical Biochemistry and perform medical research.

2 – Intended learning outcomes (ILOs):

a-knowledge and understanding:

By the end of the course the candidate will be able to:

a1-- Define the basic theories and principles of basic science that help him to understand cardiovascular diseases; regarding diagnosis, management and prevention.

b. Intellectual skills:

By the end of the course the candidate will be able to:

b1-Analyze, and evaluate medical information and relate it to medical problem solving in cardiology.

b2-Discuss Biochemical paper on evidence based manner

c. Professional and practical skills :

By the end of the course the candidate will be able to:

C1-Interpret biochemical investigations and understand the biochemical basis of diseases

C2-Ask for the suitable laboratory diagnostic tests

d. General and transferable skills:.

By the end of the course the candidate will be able to:

d1-Perform continuous medical education

Academic standards adopted

Academic standards for postgraduates was considered according to the academic standards of Boston University, school of medicine
http://www.bu.edu/academics/busm/
and was in line with those approved by The Egyptian Authority for Quality Assurance and Accreditation for Education (NAQAAE)

3 – Curriculum structure and content:

Biochemistry	Theoretical	practical
Introduction to metabolism	1	1
Carbohydrate metabolism	1	1
Function of carbonic anhydrase	1	1
Hormones	1	1
Mineral metabolism	1	1
Vitamins (daily requirement and deficiency) .	2	2
Free radicals and anti-oxidants	2	2
Food chemistry	1	1
Total	10	10

Detailed contents of course topics: (Syllabus contents):

- General properties of Enzymes
- Catalysis, Coenzymes, Enzymes Specify, Enzymes Classification & Nomenclature, Quantitative Measurement of Enzyme Activity, Isolation of Enzymes, Intracellular Distribution of Enzymes, Isoenzymes, Enzymes in Clinical Diagnosis
- Carbohydrate Metabolism: Intermediary Metabolism of Carbohydrate, Glycolysis, Oxidation of Pyruvate to Acetyl-CoA, Glycogen Formation & Degradation, Glycogenesis, Glycogenolysis, The Hexose Monophosphate Shunt or Pentose Phosphate Pathway, Gluconeogensis, Metabolism of Hexoses, Minor Pathways of Glucose Metabolism, The Uronic Acid Pathway, Metabolism of Fructose, Metabolism of Galactose.
- Lipid Metabolism: Oxidation of Fatty Acids, biosynthesis of Saturated Fatty Acids, Metabolism of Unsaturated Fatty Acids, Metabolism of Acyglycerols,

Metabolism of Sphingolipids, Phospholipids &Sphingolipids in Disease (Lipidoses).

- Role of Tissues: Metabolism of the Plasma Lipoproteins, Role of the Liver in Lipid Metabolism. Cholesterol Metabolism. Regulation of Carbohydrate & lipid Metabolism Regulation of Ketogenesis, Interconversion of Major Foodsuffs. Te Economics of Carbohydrate & Lipid Metabolism in the Whole Body
- Function of carbonic anhydrase
- Hormones
- Mineral metabolism
- Vitamins (daily requirement and deficiency).
- Free radicals and anti-oxidants
- Food chemistry

4-Teaching and learning methods

Lectures, seminars, journal clubs, case presentation and assignments

5-Student Assessment

6.1 Final written exam to assess ($a_{1,}b_1$, $c_{1,2}$)

6.2 Oral exam to assess ($b_{1, 2,}$ $c_{2,}$ $d_{1,}$)

6.3 Log book to assess (c_1& d_1)

7-List of references

Text books

- Harper's Illustrated Biochemistry 28 edition Lange. Mcgraw Hill Boston 2010
- Lippincott ' S Illustrated review of Biochemistry fourth edition 2008
- Lehningerer' Principle of Biochemistry fifth edition edition 2010
- Thomas M. Devlin Textbook of Biochemistry with Clinical Correlations

Publisher: ECFC580B2John Wiley and Sons Ltd Edition: 6th Revised edition 2008

- William J. Marshall : Clinical Chemistry: With Access 4th edition 2008

Web sites

- **www.tanta.edu.eg/faculties/medicine/departments/Bioch**
- **www.nlm.ncbi.gov**
- **www. Medical biochemistry l.org**
- http://www.textbooks.com/Catalog/PD8/ **biochemistry**

8-Other resources/ facilities required for teaching and learning to achieve the above ILOs

The department has different types of scientific activity includes

- weekly seminars to discuss new trend and techniques

- journal Club to discuss the new scientific paper in the field of Medical Biochemistry and Molecular Biology
- Free Internet access for international data bases is available for all students through the faculty postgraduate library
- The essential text books for this course are available either in department or faculty library

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

- program external evaluator: Prof.Dr. TarakFoaad
- Program Internal evaluator : Prof. Dr. Thanaa El Shiek
- Reports of external and internal evaluators
- Questionnaire to students
- Reports of faculty internal auditing system

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

8-Appendix courses specifications

-we certified 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 Course and the analysis of students and external evaluator opinions are accurate.

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

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

5) Public Health:

Public Health preventive and socialMedicine for Chest Diploma Degree Course Specifications

University: Tanta **Faculty: Medicine** **Department: Public Health*preventive and social*medicine**

A- Administrative Information

- **Course title : Public Healthpreventive and socialMedicine for Chest Diploma Degree**
- **Code: CHEST 7004**
- **Department offering the course: Department of Public Health preventive and socialMedicine**
- **Departments offering the program: Chest Diseases**

B- Professional Information

1 – Overall Course aims

This part of Master in chest diseases aims to provide post graduate students who intend to pursue careers in chest diseases practice, management and/or research at local, national and/or international levels with knowledge and skills base in the field of public health and tuberculosis in relation to chest diseases.

2 – Intended learning outcomes (ILOs):

a- Knowledge and Understanding:

By the end of the course, the student should be able to:

a1 – Recognize knowledge and principles of medical Public Health as related to the area of chest diseases.

a.2- Recognize program of tuberculosis control in Egypt.

a.3- Identify the relation between occupational medicine and chest diseases.

b-Intellectual Skills

By the end of the course, the student should be able to:

b.1-Analyse role of preventive aspects of health care system in tuberculosis and chest diseases.

b.2- analyze epidemiologic features of common respiratory problems.

b.3- Integrate the relation between industry and chest diseases.

b.4-Interpret methods of prevention of occupational exposure to respiratory hazards.

c- Professional and Practical Skills

By the end of the course, the student should be able to:

c.1-Design preventive measures for workers.

c.2- Interpret tuberculin testing.
c.3-Conduct health education session and communicate efficiently with workers .
c.4- Calculate vital indices and identify health problems related to industrial health.

d- General and Transferable Skills
By the end of the course, the student should be able to:
ed.1-Able to take leadership in motivating the community served.
d2- communicate effectively through oral presentations, data processing, analysis and presentations, written reports and scientific publications;
d3- use Information and Communications Technology;
d.4- Recognize principles of evidence based learning in problem solving and decision making.
d.5-Able to collaborate and behave ethically with colleagues in a team work during class discussion, as well as solving problems
d.6- use language and other communication skills appropriate to the patient culture.

3- Contents

Topic	Hours for lectures	Hours for Practical
Epidemiology: - General epidemiology of communicable diseases. - Epidemiology of tuberculosis. - Prevention and control of respiratory diseases esp. tuberculosis.	**5**	**5**
Occupational health, Communication and health behavior:	**5**	**5**
Demography and vital statistics related to chest diseases	**10**	**10**
Total	**20**	**20**

4-Teaching and learning methods

4.1- Lectures
4.2 Practical activities including:**Others e.g. Seminar; Journal club, Presentation, reports ....**

5-Student Assessment:

5.1 Final written examinations: long & short questions to assess from a1- a3, from b1 to b4 and from c1 to c4

5.2 Oral examination to assess from a1- a3, from b1 to b4 and from c1 to c4
5.3 Log book: to assess from d1 to d6

8- List of references

8.1 Course notes

Handout of the department

8.2 Text book

-Public Health & Preventive Medicine: Maxcy – Rosenau- Last.

8.3 Recommended books

- **Communicable Disease Epidemiology and Control: Roger Webber, LondonSchool of Hygiene and Tropical Medicine**
- **Essentials of Public Health: L. J. Donaldson, R. J. Donaldson**

8.4 Periodicals and web sites

EMHJ at www.WHO.int

9-Other resources/ facilities required for teaching and learning to achieve the above ILOs

- The general library of the faculty.
- Library of the department.

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

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

Course coordinator and head of department
name……signature……Date……

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

Quality Assurance Unit

TantaUniversity
Faculty of Medicine

Department ofChest

Course Specifications

(1stpart , 2ed semester)

Chest Diploma Degree

2015-2016

Chest Diploma Degree Course Specifications: 1st part, 2ed semester

University: Tanta Faculty: Medicine Department: Chest

A- Administrative Information

1. **Course title: Diploma. Chest Diseases**
2. **Department offering the program: Chest Department)**
3. **Department responsible for the course: , Pathology, pharmacology, Microbiology, Internal Medicine- Faculty of medicine – Tanta University**
4. **Course code: CHEST 7003 &7005**
5. **Level: 1st part, 2ed semester: 9 credit-hours. (15 weeks)**
6. **No. of Credit / taught hours:**

The course	Obligatory (Theoretical)	Practical	Scientific activity	Elective
Credit hours	4 hours	3 hours	1 hour	1 hours
Taught hours	60 Hours	90 Hours	60 Hours	15 hours

7. **Authorization date of course specification: 2/2/2016**

1-Course contents

1. Pathology &pharmacology & bacteriology : (CHEST 7003) = 2 credit hours = 20 taught hours .

Department	The course	Obligatory hours	Practical hours
Pharmacology (CHEST 7003)	Credit hours	2/3 hours	1/3 hours
	Taught hours	7 hours	7 hours

Pathology (CHEST 7003)	**Credit hours**	**2/3 hours**	**1/3 hours**
	Taught hours	**7 hours**	**7 hours**
Microbiology (CHEST 7003)	**Credit hours**	**2/3 hours**	**1/3 hours**
	Taught hours	**6 hours**	**6 hours**

2. Internal medicine :(CHEST 7005) = 2 credit hours = 20 taught hours (10 for each)

Department	The course	Obligatory hours	Practical hours
Internal medicine (CHEST 7005)	**Credit hours**	**2 hours**	**1 hours**
	Taught hours	**40 hours**	**40 hours**

1) Pathology

Pathology for Chest Diploma Degree Course specifications

University: Tanta Faculty: Medicine Department: Pathology

A- administrative Information

1- Program title: Chest Diploma and Master Degree

2- Department offering the program: Chest Department

3- Department responsible for the course: Pathology department

4- Course code: CHEST 7003

7-Authorization date of course specification:

B- Professional Information

1 – Overall Course aims

1. To become familiar with pathology nomenclature.
2. To recognize morphological and functional differences between normal and injured or diseased tissue. The first goal of the course is to learn to distinguish pathological lesions from normal tissue. The second goal is to understand, from a structural, functional and biochemical perspective, the different types of pathological lesions, and provide scenarios for how they each arise.
3. To integrate pathological findings with clinical manifestations of disease.

2 – Intended learning outcomes (ILOs):

a-Knowledge and Understanding

By the end of the course, students should be able to::

a-1.Define and discuss the main respiratory diseases that may affect the body (General pathology) as well as the basic mechanisms underlying these disorders (history, clinical data, etiology, and pathogenesis).

a.2. Determine the outcome & complications of each particular disease mainly related to respiratory system.

b-intellectual skills

By the end of the course, students should be able to::

b-1 Correlate the pathological changes with the clinical picture mainly in different respiratory diseases.

3-Course contents :

Topics	No. of hours	
	lecture	Practical
General Pathology	3	3
Special pathology	4	4
Total hours	**7**	**7**

Detailed contents of course topics: (Syllabus contents):

I-General Pathology curriculum :

1-Inflammation and repair
2-Cell and tissue injury (Degeneration)
3-Necrosis and gangrene
4-Circulatory disturbances
5-Granulomas
6-Viral, fungal, and parasitic diseases
7-Immunopathology
8-Nutritional disorders
9-Radiation injury and genetic disorders
10-Non Neoplastic disorders of growth
11-Neoplasia
12-Immunohistochemistry and cytology

II-Special Pathology:

Diseases of the respiratory system with special reference to:

1-Infections
2-Vascular disturbances
3-Granulomas (T.B - Sarcoidosis)
4- Intersitial pneumonia
5-Pulmonary immunodificiency
6-Bronchogenic carcinoma
7-Mesothelioma
8-Pneumoconiosis
9-Lung cyst

4-Teaching and learning methods

Illustrated lectures
Practical sections

5-Student Assessment

5.1- written examination.a1,2
5.2 -oral examination.b1

8- List of references

8.1 Course notes

Hand outs of lectures (either soft or hard copies)

8.2 Text book

General and special pathology books produced by the staff members of the pathology department.

8.3 Periodicals and web sites

General Pathology Sites

- http://www.pathologyoutlines.com/
- http://library.med.utah.edu/WebPath/webpath.html
- http://www.pathologyatlas.ro/
- http://www.humpath.com
- http://pathweb.uchc.edu/
- http://surgpathcriteria.stanford.edu/
- http://www.pathmd.com/

9-Other resources/ facilities required for teaching and learning to achieve the above ILOs

Free Internet access for international data bases is available for all postgradute students through the faculty postgraduate library

The essential text books for this course are available either in department or faculty library

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

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

Course coordinator and head of department

name……..signature……Date……

Head of quality assurance unit:

name……..signature……Date……

2) Pharmacology :

Pharmacology for Chest diploma Degree Course specifications

University: Tanta Faculty: Medicine Department: Pathology

A- Administrative Information

1-Course title: Pharmacology for diploma degree of Chest

2- Department offering the program: Chest Department

3- Department responsible for the course: Pharmacology Department and Chest department Faculty of medicine.

4- Course code: CHEST7003

5- Authorization date of course specification: 02 / 09/2013

B- Professional Information

1 – Overall Course aims

- Perfect the bases and methods of medical pharmacology
- Apply analytical methods when dealing with medical problem
- Oriented with the current medical problems, and up dates in pharmacology

2 – Intended learning outcomes (ILOs):

a-Knowledge and understanding:

By the end of the coursegraduate should be able to

a.1. 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.b.1.8. Take a relevant history of a patient's medication regimen

b. Intellectual skills:

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

b.1. Take a relevant history of a patient's medication regimen

3-Course contents

Pharmacology	Theoritical	Practical
Antibiotics use and misuse in pulmonary infection	1 h	1 h
Specific Anti tuberculous treatment	1 h	1 h
Anti-viral drugs	1 h	1 h
Anti-fungal drugs	1 h	1 h
Drugs for treatment and	1 h	1 h

Prophylaxis of asthma		
Drugs used in COPD.	1 h	1 h
Steroids (phobia)	1 h	1 h
Total	**7 h**	**7 h**

Detailed contents of course topics: (Syllabus contents):

GENERAL

Drug-drug interactions

ANS

Sympathomimetic
Adrenergic receptor antagonists
Parasympathomimetics
Cholinergic antagonist

CNS

AnalgesicsCNS stimulants

BLOOD

Anticoagulants
Thrombolytics&fibrinolytics
Antiplatelets

CVS

HypertensionShock and hypotensive state

RESPIRATORY

Drug therapy of bronchial asthma
Treatment of status asthmaticus
Drug therapy of cough
Therapeutic gases

AUTACOIDS

Histamine antagonists
Renin Angiotensin antagonists
Plasma kinins
Eicosanoids
Leukotrienes

ENDOCRINE

Corticosteroids

CHEMOTHERABY

Classification of Antimicrobials
Beta lactam antibiotics
Aminoglycosides
Chloramphenicol
Tetracyclines
Vancomycin
Macrolide antibiotics
Sulfonamides
Quinolones
Chemotherapy of tuberculosis
Antiviral drugs

4-Teaching and learning methods

Illustrated lectures
Tutorial sessions,

5-Student Assessment

Written examination. One written paper contains multiple long and short questions .to assess (a1)

Oral examination. One sitting (2-3 staff members included in this sitting) to assess (a1.b1).

7- List of references

7-1 Essential books (text books)

-Goodman &Gilman's : The Pharmacological Basis of Therapeutics.
-Basic & Clinical Pharmacology (ed. G. Katzung)

7-2Recommended books

- Pharmacology (ed. Rang H.P.& Dale M.)
-Lippincott (illustrated pharmacology Review).
- Pharmacology board review (Gary C.Rosenfeld& David S. Loose)
-Clinical Pharmacology (DR. laurence)

7-3- Periodical, web sites:

-Br. J. Pharmacology - Biochemical Pharmacology
-www. biomed central com. -www.Pubmed.Com
-www.medscape. Com.www.eulc.edu.eg
www.Science direct. Com www.Wiley Blackwell.comwww.Springer.com

8-Other resources/ facilities required for teaching and learning to achieve the above ILOs

None

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

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

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

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

3) Microbiology:

Microbiology & Immunology for Chest diploma Degree Course specifications

University: ***Tanta*** ***Faculty:*** ***Medicine*** ***Department: Medical Microbiology & Immunology***

1- Administrative Information

1- Coursetitle: Microbiology & Immunology forchest diploma degree

2- Department offering the program:chest Department

3- Department responsible for the course: Medical Microbiology & Immunology

4- Course code-: CHEST 7003

5-Authorization date of course specification:

2-Professional Information

1 – Overall Course aims

1-To identify the commonly known pathogenic organisms (Bacteria , viruses or fungi)as regards their morphology , culture characters ,biochemical reactions ,virulence characters ,pathogenesis , laboratory diagnosis ,treatment &prevention

2-To teach the immune response either normal or pathological (Hypersensitivity,
Autoimmunity&graft rejection).

3-To discuss the hospital acquired infections & how you prevent .

2 – Intended learning outcomes (ILOs):

a-knowledge and understanding:

By the end of the course, students should be able to:

a.1-Describe the basic theories and principles of microbiology and immunology.

a.2-Discuss the molecular mechanisms of infectious diseases of different etiology.

b-intellectual skills

By the end of the course, students should be able to:

b.1- Interpret the basic theories and principles of microbiology and immunology.

b.2-analyse the interaction between medical practice and surrounding environment

b.3- organizeaplan for laboratory diagnostic service.

b.4- interpret diagnostic laboratory results in clinical microbiology.

3-Course contents

Topics	Lecture	Clinical/ lab
General bacteriology(anatomy of bacterial cell -sterilization-chemotherapy-genetics)	1	1
Immunology (host parasite relationship – immune response- hypersensitivity- auto immune disorders – tumor immunity – HLA system)	1	1
Systemic bacteriology (gram positive cocci& bacilli– gram negative cocci& bacilli – mycobacteria – spirochetes – hospital acquired infection –mycoplasma-Qfever)	2	2
Virology (general virology – pathogenesis & control of viral disease -adeno virus – rhino virusrs – hepatitis viruses – oncogenic viruses – varicella viruses-AIDS- orthomyxo- paramyxo)	1	1
Mycology (deep mycosis)	1	1
Total	**6**	**6**

4-Teaching and learning methods

Illustrated lectures.

Practical sections

5-Student Assessment

5.1 Written examination. One written paper contains multiple long and short questions.

5.2 Oral examination. One sitting (2-3 staff members including in this sitting)

5.1Written .to assess (a1,.2_b1,3)

5.2 …oral ….to assess…(b.2,4)

7) List of references

7.1 Course notes

7.2 Text book

7.3 Recommended books

7.4 Periodicals and web sites

8) Other resources/ facilities required for teaching and learning to achieve the above ILOs

None

9) We certify that all of the information required to deliver this course is contained in the above specifications and will be implemented

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

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

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

4) Internal medicine:

Internal medicine for Chest diploma degree Course specifications

University: Tanta Faculty: Medicine Department: Internal medicine

A- Administrative Information

1-Course title: Internal medicine for Chest Master & Diploma degrees

2-Department offering the program: chestDepartment

3-Department responsible for the course: Internal medicine and chestDepartment

4-Course code: CHEST 7005

5-Authorization date of course specification:

B- Professional Information

1–Overall Course aims

Our course aim to offer advanced knowledge and skills that allow candidate to practice internal medicine ethically and professionally, and gain positive attitude towards continuous medical education

2–Intended learning outcomes (ILOs):

A-knowledge and understanding:

By the end of the course, students should be able to:

a.1- Describe the basic theories and principles of internal medicine specialty which help in understanding chest diseases.

B-Intellectual skills

By the end of the course, students should be able to:

b.1- Analyze, and Prioritize the medical problems

b.2-Solve common medical problems related to internal medicine specialty.

C-Professional &practical skills

By the end of the course, students should be able to:

c.1-Apply professional medical skills in internal medicine specialty regarding clinical examination, diagnosis, and management

d-General transferable skills

By the end of the course, students should be able to:

d.1- Apply self evaluation and specify his medical educational needs.

d.2-Use different learning resources to get knowledge and information.

d.3- Mange time and practice team working

d.4-lead a team in specified professional job.

d.5- Perform continuous medical education

3-Course contents

Topics	No. of hours	
	lecture	Clinical
Systemic and pulmonary hypertension	4	4
Rhumatic heart diseases	3	3
Ischemic heart diseases	3	3
Congenital heart diseases	2	2
Pericardial effusion and constrictive pericarditis	3	3
ECG, Echocardiography and exercise testing	3	3
Intervsional cardiac procedures	2	2
Diabetes and diabetic coma	5	5
Thyrotoxicosis, hypothyroidism and other hormonal disturbances with special reference to chest diseases	4	4
Renal failure	4	4
Liver cell failure	4	4
Collagen diseases	3	3
Total	**40**	**40**

Detailed contents of course topics: (Syllabus contents):

I-Cardiovascular disorders

1. ECHOCARDIOGRAPHY, ELECTROCARDIOGRAPHY AND ETT.
2. HEART FAILURE
3. ARTERIAL HYPERTENSION
4. PULMONARY HYPERTENSION & COR PULMONALE
5. CONGENITAL HEART DISEASE IN ADULTS
6. IHD
7. PERICARDIAL DISEASE
8. RHEUMATIC FEVER
9. INTERVENTIONAL CARDIAC PROCEDURES

II-GIT&hepatology disorders

1. HEPATIC FAILURE
2. LIVER IN SYSTEMIC DISEASES

III-Hematology & oncology disorders

1. APPROACH TO THE ANEMIAS
2. APPROACH TO THE PATIENT WITH LYMPHADENOPATHY AND SPLENOMEGALY
3. EOSINOPHILIC SYNDROMES
4. APPROACH TO THE PATIENT WITH BLEEDING AND THROMBOSIS
5. TRANSFUSION MEDICINE
6. LEUKEMIAS & LYMPHOMA

IV-Nephrology disorders

1. ACUTE AND CHRONIC RENAL FAILURE
2. KIDNEY & HEART , LIVER & LUNG RELATIONSHIP

V-Rheumatology disorders

1. APPROACH TO THE PATIENT WITH RHEUMATIC DISEASE
2. LABORATORY TESTING IN THE RHEUMATIC DISEASES
3. RHEUMATOID ARTHRITIS
4. THE SPONDYLOARTHROPATHIES
5. SYSTEMIC LUPUS ERYTHEMATOSUS
6. SCLERODERMA (SYSTEMIC SCLEROSIS)
7. THE SYSTEMIC VASCULITIDES

VI-Endocrinology , nutritional , Mineral & metabolic disorders

a-Endocrinology disorders

1. THYROID DISORDERS
2. HYPOCORTISOLISM
3. DIABETES MELLITUS
4. MULTIPLE-ORGAN SYNDROMES: CARCINOID SYNDROME

b- Nutritional disorders

1. OBESITY

d- metabolic disorders

1. IRON OVERLOAD (HEMOCHROMATOSIS)

B- CLINICAL CASES

I-CARDIOVASCULAR

1. IHD
2. Congestive heart failure
3. Hypertension
4. RheumatiCheart disease

IV-GIT&Hepatology disorders

1. Cirrhosis
2. Ascitis
3. G.I. bleeding

V-HEMATOLOGY/ONCOLOGY

1. Anemia
2. Bleeding disorders
3. Lymphoma
4. Leukemia

VI-NEPHROLOGY

1. Kidney in systemic diseases
2. Acute and chronic renal failure

VII-RHEUMATOLOGY

1. Systemic lupus erythematosus
2. Rheumatoid arthritis
3. Vasculitis

4. Scleroderma

VIII-ENDOCRINOLOGY

1. Adrenal insufficiency
2. Diabetes
3. Hyper/hypothyroidism
4. Obesity

C- SKILLS

1. Interpretation of laboratory medicine tests.
2. Electrocardiography interpretation.
3. Radiology: Plain X-ray, contrast radiology, ultrasound, CT, MRI & nuclear medicine
4. Renal dialysis & Ultrafiltration
5. paracentesis
6. ICU skills

4-Teaching and learning methods

1. Illustrated lectures: Large group plenary sessions in lecture theaters are time tabled; they set the scene for a topic, highlight important issues and arouse curiosity in relevant areas.
2. Clinical rounds: Tutors demonstrate the core practical clinical skills and students practice.
3. Problem based learning: to study written descriptions of clinical situations &Interpretation of laboratory medicine tests.
5. Assignment : Each student completes a review on a selected topic and delivered in a known dead time.
6. Attendance with guidance.
7. Illustration of internal medicine objectives using data show and movies.

5-Student Assessment

5.1 Final written exam to assess (a1& b1,)
5.2 Oral exam to assess (a1 - b1)
5.3 Practical exam to assess (a1- b1& c 1)
5.4 Log book to assess (b1 -c 1 - d 1, 2, 3, 4, 5)

7-List of references

7.1 Course notes
-Handout of lectures.
-National books approved by the internal medicine council
7.2 Text books
-Cecil textbook of medicine
7.3 Recommended books
-Davidson's principles and practice of medicine
-Clinical medicine Kummar& Clark
-1000 MCQs for Davidson's principles and practice of medicine
-MCQs for clinical medicine Kummar and Clark
-Hutchison's clinical methods
-Clinical examination, Macleod, Munro
-A guide to physical examination, Barbara Bates
7.4 Periodicals and web sites
E-medicine &pubmed websites
7.5 The Egyptian Authority for Quality Assurance and Accreditation for Education (NAQAAE)

8-Other resources/ facilities required for teaching and learning to achieve the above ILOs

- Rooms for small group teaching.
- Black and white board.
- Audiovisual aid (data shows, overhead, laptops and slide projectors).
- Faculty library.
- Electronic library

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

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

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

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

Quality Assurance Unit

TantaUniversity
Faculty of Medicine

Department ofChest

Course Specifications
(2nd part , 3rd semester)

Chest Diploma Degree

2015-2016

Chest Diploma Degree Course Specifications,2nd part, 3rd semester

University: T anta Faculty: Medicine Department: Chest

A- Administrative Information

1. **Course title: Diploma. Chest Diseases**
2. **Department offering the program: Chest Department**
3. **Department responsible for the course: Chest Department**
4. **Course code: 7006**
5. **Level: 2ndPart, 3rd semester: 9 credit-hours. (15 weeks)**
6. **No. of Credit / taught hours:**

The course	Obligatory (Theoretical)	Practical	Scientific activity	Elective
Credit hours	4 hours	3 hours	1 hour	1 hours
Taught hours	60 Hours	90 hours	60 Hours	15 hours

7. **Authorization date of course specification: 2/2/2016**

B- Professional Information

1 – Overall Course aims

Purpose of the curriculum:

The purpose of this curriculum is to provide the basis for training in the specialty of Chest Diseases 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.

Professionalism is a difficult quality to define. One definition proposed by the Royal College of Physicians is “a set of values, behaviors’ and relationships that underpin the trust that the public has in the profession.” Professionalism includes the ability to deal with diagnostic and therapeutic uncertainty. Whilst this curriculum attempts to spell out the knowledge, skills attitudes and behaviors’ that underpin training in Chest Diseases, the attributes which make up the “professional” specialist are much more than the simple sum of all these added together. The

progression from candidate to professional requires, in addition to the simple acquisition of the building blocks described in this curriculum, the development of a high degree of personal and professional maturity and this requires time, experience and the internalization by the candidate of a whole variety of attributes that he/she is exposed to in the work place. In part, this also involves learning by example, such that it is incumbent on all trainers to ensure that their candidates are exposed to appropriate work place and learning environments.

OBJECTIVES OF CHEST DISEASES SPECIALTY CURRICULUM:

The candidate will be given the opportunity to become competent in:

1. Establishing a differential diagnosis for patients presenting with clinical features of respiratory disease by appropriate use of history, clinical examination and appropriate investigations.
2. Applying knowledge derived from the appropriate basic sciences which are relevant to Chest Diseases.
3. Applying appropriate and sufficient knowledge and skills in the diagnosis and management of patients with respiratory disease to ensure safe independent practice at NHS independent Consultant Specialist level.
4. Developing a management plan for the "whole patient." This should include not only the appropriate treatment but also take into account health promotion, disease prevention, long-term management plans and palliative care medicine where appropriate.

2 – Intended learning outcomes (ILOs):

a. knowledge and understanding:

By then, end of the Course the candidate will have gained knowledge and systematic understanding of:

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

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

a.3. Discuss 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 .

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. 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.8. 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. Discuss 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)

b. Intellectual skills:
By the end of the Course 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. To 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. Clinical assessment of different cardiac, renal and hepatic diseases and 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 Course the trainee will be able to:

(c.1.) Communication skills:

(c.1.1.) Patient- doctor relationship

c.1.1.1. Apply respect to all patients irrespective of their socioeconomic levels, culture or religious beliefs and use language appropriate to the patient's culture.
c.1.1.2. Conduct patient interviews that are characterized by patience and attentive listening.
c.1.1.3. 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.1.1.4. Write clear concise patient records: admission sheet, progress notes, physician orders, and referrals for consultation, discharge summary and follow-up notes.
c.1.1.5. Use appropriate skills and strategies of communication during difficult situations such as giving bad news and dealing with angry patients.
c.1.1.6. Discuss medical errors or professional mistakes honestly and openly in a way that promotes patient trust and self-learning.

(c.1.2.) Relation to collaboration with healthcare professionals:

c.1.2.1. Communicate effectively with other health care professionals to maximize patient benefits and minimize the risk of errors.
c.1.2.2. Respect the role and contributions of other health care professionals regardless of degree or occupation.
c.1.2.3. Undertake appropriate formal and informal consultations with colleagues and perform appropriate referrals to other health care professionals.
c.1.2.4. Write a concise and informative report on patient(s) conditions.
c.1.2.5.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.1.2.6. General measures to reduce spread of infection in hospital wards

d. General and transferable skills:

by the end of the course 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 by consistently doing the following:

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-Course contents

1. Obligatory hours

4 credit hours = 60 taught hours distributed as follows:

1. Asthma 5 hours
2. COPD 5 hours
3. Broncieсtasis and other airway diseases 4 hours

4. Respiratory failure 4 hours
5. Cystic fibrosis 3 hours
6. Sleep related breathing disorders 4 hours
7. Smoking cessation /respiratory disease prevention 3 hours
8. Intensive care and high dependency care units 4 hours
9. Pulmonary exercise physiology and pulmonary rehabilitation 3 hours
10. Home care (hospital at home and early discharge schemes) 2 hours
11. Palliative care 2 hours
12. Imagining techniques 4 hours
13. Pulmonary function testing 4 hours
14. Broncoscopy 3 hours
15. Skin testing (tuberculin and allergy tests)2 hours
16. Patient oriented approach according to symptoms and signs 3 hours
17. Psychological factors and quality of life in respiratory diseases 2 hours
18. Respiratory epidemiology 3 hours

2. Practical training:

3credit hours =Total 90hours .

Clinical problems that must be observed, managed under supervision & managed independently by Pulmonary Medicine candidate

Acute and chronic dyspnea
Undifferentiated chest pain
Cough and expectoration
Hemoptysis
Bronchial asthma
COPD
Bronchiectasis and suppurative lung diseases
Acute respiratory failure
Critically ill patient with acid – base disturbance
Sleep related breathing disorders
Cardio-pulmonary resuscitation
Chest Cases who are prepared for pulmonary or non-pulmonary surgery

2. Scientific activity

1credit hour =Total 60 hours.

a- Seminars and bedside teaching:

1 taught hour /week

b- Workshops, Congresses, Thesis discussion and Chest conferences:

N.B: Those which have credit hours will be accepted as it is.

c- Practical procedures:

Each procedure has 1 scientific hour.

The candidate should fulfill at least 10 different procedures.

Procedure/ Investigation	Level of participation	Level of Competence
Spirometry	Interpret report	II
ABG	Attend Interpret Perform	III
Thoracocentesis	Attend Perform	II
FOB: BAL	Attend Assist Perform	III
FOB: NB	Attend Assist Perform	III
Non invasive ventilation	Attend Assist Perform	III
Invasive ventilation	Attend Assist	II
Endotracheal intubation	Attend assist Perform	III
Polysomnography& Sleep studies	Attend Perform	II
Pulmonary rehabilitation & physiotherapy	Attend assist Perform	III
Nutritional support in ICU	Attend assist Perform	III
CXR & CT	Interpret report	II

Procedure/ Investigation	Level of participation	Level of Competence
Thoracoscopy	Attend observe	II
Intercostal intubation & pleural biopsy	Attend observe	II
ECG & Echocardiography	Perform & interpret Attend & interpret	II II
Rigid bronchoscopy	Attend & observe	II
Cardio-pulmonary resuscitation	Attend & assist Perform	III
Advanced pulmonary functions	Attend & observe Interpret	III

Definition of the levels of competence

Level I: Experience of selecting the appropriate diagnosis modality & interpreting the results or choosing an appropriate treatment for which the patient should be referred. This level of competence does not include performing a technique.

Level II: Practical experience, but not as an independent operator (has assisted in or performed a particular technique under the guidance of a superior staff).

Level III: Is able to independently perform the technique or procedure unaided.

4-Teaching and learning methods

The following methods of teaching and learning will be used:

1) Apprenticeship learning (experiential learning):

- Observation
- Assisting
- Participation
- Supervised Performance
- Independent Performance

2) Formal Teaching

- Lectures
- Seminars
- Clinical ward rounds
- Crash courses
- Workshops

3) Self study

- Library
- Textbook
- Journals

- Internet

4) Meetings and Conferences

5) Supervised Research

5-Student Assessment

The general rules and regulations of assessment approved by Tanta University.

End semester assessment :

Log book :

All candidates must successfully fuffill at least 75% attendance of theoretical, practical training and scientific activity .

End semester exam :

At the 15 th week, All candidates must successfully pass exam in form of MCQ exam for theoretical and practical training .

6- Listof references

6.1 Course notes

6.2 Text book

Fishmann's Chest Diseases

Murray Pulmonary Medicine

Crofton and Douglas Pulmonary Medicine

6.3 Recommended books

6.4 Periodicals and web site

American Review Respiratory and Intensive Care Medicine

European Respiratory Journal

Chest

Thorax

7-Other resources/ facilities required for teaching and learning to achieve the above ILOs

None

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

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

Course coordinator and head of department

name……..signature……Date……

Head of quality assurance unit:

name……..signature……Date……

The ILOs of the 3rd semester course specifications included in the appendix are integral part of this course program.

Appendix

A. Practical training ILOs

1 Breathlessness

Objective

- Be competent to carry out specialist assessment of severity and form a structured differential diagnosis leading to appropriate further investigation and management
- Candidate must have experience (minimum of 2 years) in dealing with patients presenting withchronic symptoms in outpatient department
  Or acute symptoms in acute/emergency admissions unit
- Be able to manage the breathless patient effectively

Knowledge

- Causes of breathlessness
- Differentiate cardiac, respiratory, neuromuscular and metabolic causes
- Know and understand pathogenesis of causes
- Know and understand management/treatment
- Pharmacology of drugs used
- Relevant guidelines

Skills:

- Performance and interpretation of spirometry (competence)
- Interpretation of other appropriate Lung Function Tests (competence)
- Interpretation of Chest Radiology:
  - Chest X-Ray
  - V/Q scans
  - Chest CT scans (competence))
- Performance and interpretation of arterial blood gases (competence)
- Use of inhaled and nebulised drug therapy (competence

2 Cough

Objective

- Be competent to carry out specialist assessment and form a structured differential diagnosis of causes leading to appropriate further investigation and management

- Candidate must have experience in assessing patients referred to the outpatient department with cough (minimum of 2 years)
- Be able to manage the patient with cough effectively

Knowledge

- Causes of cough with:
  Normal CXR
  Abnormal CXR
- How to formulate an appropriate differential diagnosis
- Appropriate investigation of cough, including specialist studies
- ENT causes
- Management/treatment of cough linked to underlying diagnosis
- Pharmacology of drugs used
- Relevant guidelines

Skills:

- Performance and interpretation of spirometry.
- Interpretation of other appropriate Lung Function Tests
- Interpretation of Chest Radiology
- Special investigations, including bronchoscopy
- Use of inhaled and nebulised drug therapy.

3 Haemoptysis

Objectives

- Be competent to undertake specialist assessment and form a structured differential diagnosis in patients with haemoptysis leading to appropriate further investigation and management
- Candidate must have experience of patients presenting with:
  - haemoptysis in outpatient setting
  - acute severe haemoptysis in acute/emergency admissions unit setting (minimum of 2 years)
- Be able to manage the patient with haemoptysis effectively

Knowledge

- 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

Skills:

- Interpretation of Chest Radiology
- Bronchoscopy
- Resuscitation, including basic airway skills

4 Pleuritic Chest Pain

Objectives:

- Be competent to undertake specialist assessment and form structured differential diagnosis in patients with pleuritic chest pain
- Candidate must have experience in dealing with patients presenting with
  -chronic symptoms in outpatient department
  -acute symptoms in acute/emergency admissions unit
- Be able to manage the patient with pleuritic chest pain effectively

Knowledge:

- Causes of pleuritic chest pain
- Understand pathogenesis of causes
- Differential diagnosis of causes
- How to formulate a plan of investigation, including appropriate use of ultrasound, closed and CT-guided pleural biopsy and Medical Thoracoscopy
- Treatments and Management
- Pharmacology of drugs
- Relevant guidelines

Skills:

- Interpretation of Chest Radiology including Chest XRay, V/Q scans, CT scans, CTPA scans
- Pleural biopsy
- Ultrasound
- Medical Thoracoscopy (knowledge of; some candidates may gain experience)

5 Abnormal Chest X-Ray

Objectives:

- Be competent to assess and form differential diagnosis in patients with:
  -localized abnormalities on chest x-ray, for instance mass lesions
  -diffusely abnormal chest x-ray, for instance interstitial pulmonary fibrosis
- Candidate must have experience in dealing with patients presenting with the following throughout training:
  -abnormal chest x-ray in outpatient department
  -abnormal chest xray in acute/emergency admissions unit
- Be able to formulate an appropriate plan for investigation and management

Knowledge:

- Causes of abnormal Chest X-Ray

- Differential diagnosis of causes
  Know and understand pathogenesis of causes
- Know how to formulate plan for further investigation and management

Skills: Interpretation of Chest Radiology

B. Practical Procedures ILOs

1 – Advanced Life Support

Objectives:

- Be competent to carry out and supervise effective resuscitation

Knowledge:

- Causes of cardiopulmonary arrest
- Principles of cardio-pulmonary resuscitation
- Organ donation issues
- Relevant guidelines

Skills:

- Be proficient and competent in basic and advanced life support
- Be proficient and competent in the use of defibrillators
- Be competent in judging when ALS is not appropriate
- Candidates must pass the ALS (UK)
- Candidates' JRCPTB training portfolio/DOTS must show they have performed successful resuscitation

2 – Bronchoscopy

Objective

- Be safe, efficient and competent at fiberoptic bronchoscopy and relevant associated techniques

Knowledge

- Indications for fiberoptic bronchoscopy
- Safe sedation for bronchoscopy
- Techniques of fiberoptic bronchoscopy
- Bronchoalveolar lavage
- Transbronchial biopsies
- Be aware of more advanced diagnostic and therapeutic bronchoscopic techniques
- Patient consent and adequate explanation of risks and benefits
- Relevant guidelines
- Infection control/safety at work issues

Skills:

- Be competent in safely performing fiberoptic bronchoscopy. A minimum of 200 should be recorded in the training portfolio/DOTS. Initially the candidate will be an observer andsubsequently perform bronchoscopy under supervision, with appropriate increasing independence as training progresses
- Candidates should not bronchoscope unsupervised until at least 150 supervised bronchoscopies have been undertaken and their educational supervisor has assessed them as competent

3 – Respiratory Physiology and Lung Function Testing

Objectives:

- Have knowledge and experience of all lung function tests
- Be competent in performing simple lung function tests; have experience of the performance of more complex tests
- Be competent in interpreting all lung function tests
- Candidates must care for inpatients and outpatients having lung function tests during clinical placements (minimum 2 years)

Knowledge:

- Theory of simple spirometry and flow-volume loops
- Theory of measurement of static lung volumes and gas transfer
- Theory of body plethysmography
- Assessment of airway hyperresponsiveness
- Hypoxic challenge/fitness to fly tests
- Exercise testing (exercise induced bronchoconstriction, six minute walk, shuttle walk tests, cardiopulmonary exercise tests)
- Respiratory muscle assessment
- Relevant guidelines
- How to set up/supervise the running of a lung function laboratory
- Relevant infection control, quality control and safety at work issues

Skills:

- Be able to perform and interpret simple lung function tests, including spirometry and arterial/capillary blood gases
- Have knowledge and experience (but not competence) of the performance of all the other lung function tests listed under knowledge section
- Interpretation of all lung function tests (competence)

4 – Sleep Studies

Objective

- ❖ Have experience of screening studies, multichannel studies and polysomnography
- ❖ Be competent in the interpretation of screening studies
- ❖ Have experience of the interpretation of multi-channel studies and polysomnography
- ❖ Be competent in the initiation of CPAP and NIV

Knowledge

- ❖ Causes of sleep breathing disorders
- ❖ Methods of screening for sleep breathing disorders
- ❖ Multi-channel studies
- ❖ Polysomnography
- ❖ CPAP, including auto-titration, and NIV
- ❖ Relevant guidelines

Skills

- ❖ Perform and interpret screening sleep studies (competence)
- ❖ Interpret multichannel sleep studies (experience)
- ❖ Interpret polysomnography (knowledge)
- ❖ Initiate CPAP and NIV (competence)
- ❖ Initially candidate will be under the supervision of a senior colleague skilled in the performance of these techniques and then will perform/interpret independently

5 – Non-invasive Ventilation and CPAP

Objective

- Be competent in initiating CPAP and NIV

Knowledge

- Indications for CPAP and NIV
- How to set up and train a patient to use the equipment
- Importance of input form physiotherapist/other health care professionals
- Methods available
- Relevant guidelines

Skills

- Set up patients on CPAP and NIV. The candidate should be supervised until signed off as competent by the Educational Supervisor
- Document sufficient patients in training portfolio/DOTS

6 – Intensive Care (ICU) and High Dependency Units (HDU)

Objective

- Be competent to recognize patients who will benefit from intensive care or high dependency units
- Have knowledge and experience of the care provided in intensive care and high dependency units
- Candidate may care for inpatients in ICU and HDU during their clinical placements. Candidate must also spend at least 60 working days in an intensive care unit approved by the Regional Chest Diseases STC/PD. Ideally this should occur in one block. If this is not possible, 4 units of 15 consecutive working days is acceptable
- Candidates may have to be seconded to a specialized unit to gain experience as this is not available in all placements

Knowledge

- Conditions requiring ICU and HDU, particularly Acute Respiratory Distress Syndrome (ARDS) and septic syndromes
- Knowledge of measures used to monitor and support all vital organ systems in an intensive care unit
- Requirements for an adequately staffed and equipped unit
- Interaction of anaesthetists physicians, surgeons, nurses, microbiologists, physiotherapists, dieticians
- Role of the multidisciplinary team in ICU and HDU
- Knowledge of the interface between ICU/HDU and the general/specialty wards, including outreach services
- Relevant guidelines

Skills

- ALS skills (competence)
- Basic airway skills (competence)
- Ability to advise on and manage respiratory patients on ICU and HDU (competence)
- Ability to advise on the respiratory care of general patients on ICU and HDU (competence)
- Ventilatory support modalities (competence in C-PAP and NIV; experience of mechanical ventilation and mechanical ventilation strategies)
- Chest drain insertion (competence)
- Bronchoscopy (competence)

C. Obligatory ILOs

<u>1: Asthma</u>

Knowledge

• Definition, classification (including clinical forms, phenotypes, staging and level of control) and aetiology of asthma.
• Epidemiology and pathophysiology of asthma, including mechanisms of inflammation, structural changes involved, pathology in allergic and non-allergic asthma, relationship between pathology and asthma severity
• Risk factors for asthma, including host and environment factors
• Genetics of asthma
• Relevant investigations including lung function testing (including bronchodilator and bronchoprovocation tests, as well as peak flow monitoring), chest X-ray, CT, nuclear techniques, exhaled NO, skin allergy testing, serum allergy testing and bronchoscopy
• Knowledge of possible differential diagnoses, including early childhood asthma, occupational asthma, vocal cord dysfunction, gastro-oesophageal reflux, upper respiratory tract disorders and COPD
• Sport and asthma
• Management of asthma and relevant therapeutic measures, including pharmacology of the drugs used in asthma treatment, patient education and the development of a written asthma management plan
• Alternative and complementary medicine for asthma
• Allergen-specific immunotherapy (hyposensitisation)

Skills

• Application of the above knowledge
• Evaluation of functional status including bronchodilator and bronchoprovocation tests and disability due to asthma
• Allergy testing
• Bronchoscopy
• Prescription of medication according to level of control
• Patient education including demonstrating use of inhaler devices

Behaviour and attitudes

• Multidisciplinary approach

2: COPD

Knowledge

• Definition, classification and aetiology of COPD, chronic bronchitis and emphysema and awareness of its heterogeneity
• Epidemiology and pathophysiology of COPD, including mechanisms of inflammation, structural changes and cell damage and repair

• Risk factors for COPD, including tobacco smoke and anti-protease deficiency (including physiological role of alpha-1-antitrypsin and its genetic characteristics, role of other anti-protease inhibitors, liver disease in antiprotease deficiency)
• Knowledge of possible differential diagnoses /co-existent disorders, including asthma, upper respiratory tract disorders, gastro-oesophageal reflux, obliterative bronchiolitis, bronchiectasis.
• Relevant investigations including spirometry, other relevant lung function tests, arterial blood gas analysis, peak flow monitoring, bronchodilator and bronchoprovocation testing.
The use of X-Ray, CT, ultrasound, nuclear techniques and exhaled NO, serum alpha-1- antitrypsin testing, pulmonary artery catheterisation
• Management of COPD including relevant therapeutic measures. Methods of oxygen supplementation including long-term oxygen therapy, non-invasive and mechanical ventilation, pulmonary rehabilitation and early discharge/hospital at home schemes.
Pharmacology of drugs used. Patient
education. Peak flow monitoring.Indications for hospitalisation.Alpha-1-antitrypsin supplementation therapy. Relevant vaccinations
• Management of related complications, including pneumothorax, respiratory failure, pulmonary arterial hypertension and corpulmonale, as well as systemic effects of COPD

Skills

• Application of the above knowledge
• Evaluation of functional status and disability due to COPD
• Assessment of suitability for lung volume reduction surgery and transplantation where appropriate
• Bronchoscopy
• Prescription of medication according to level of control
• Non-invasive ventilatory support

Behaviour and attitudes

• Multidisciplinary approach

3: Bronchiectasis and other airway diseases

Knowledge

• Definition, classification and aetiology of bronchiectasis, acute and chronic bronchitis, bronchiolitis, respiratory tract stenosis and
tracheobronchomalacia, tracheo-oesophageal fistula, upper respiratory tract disorders, vocal cord dysfunction, foreign body aspiration, gastro-oesophageal reflux

• Epidemiology and pathophysiology of these disorders
• Knowledge of possible differential diagnoses
• Knowledge of surgical indications and referral
• Relevant investigations, including X-ray, CT, nuclear techniques, exhaled NO, arterial blood gas analysis, and bronchoscopy including bronchography.
• Management including relevant therapeutic measures and physiotherapy
• Methods of oxygen supplementation including long-term oxygen therapy, non-invasive and mechanical ventilation
• Pharmacology of drugs used
• Patient education
• Peak flow monitoring
• Indications for hospitalisation
• Relevant vaccinations
• Relevant microbiology

Skills

• Application of the above knowledge
• Evaluation of the functional status and disability due to bronchiectasis and other airway diseases
• Assessment of suitability for surgery where appropriate
• Prescribing physiotherapy
• Bronchoscopy
• Interventional bronchoscopic techniques, e.g. stent placement.
• Prescription of medication according to level of control
• Non-invasive ventilation.

Behaviour and attitudes

• Multidisciplinary approach.

4: Respiratory failure (RF)

Knowledge

• Definition, classification and aetiology of acute and chronic respiratory failure (acute respiratory distress syndrome, obstructive lung disease, neuromuscular disease, chest wall diseases, other restrictive diseases)
• Epidemiology and pathophysiology of RF
• Relevant investigations: non-invasive (chest x-ray, ultrasound, fluoroscopy, CT, nuclear techniques, pulmonary function tests) and invasive (bronchoscopy)
• Relevant therapeutic measures such as systemic/inhaled drug therapy, oxygen therapy, ventilatory support, cardio pulmonary resuscitation, endobronchial therapy, intercostal tube drainage, treatment of sepsis and multi-organ failure)

Skills

• Application of the above knowledge

• Ultrasound
• Evaluation of functional status
• Bronchoscopy
• Systemic and inhaled drug therapy
• Ventilatory support
• Management of barotrauma

Behaviour and attitudes

• Multidisciplinary approach
• End of life management

5: Cystic Fibrosis (CF)

Knowledge

• Definition, classification and aetiology of respiratory and non-respiratory manifestations of CF (including massive haemoptysis,
pneumothorax, gastrointestinal disease, diabetes, problems of fertility and pregnancy and psychosocial problems)
• Epidemiology and pathophysiology of CF
• Relevant investigations (including microbiological investigations)
• Non-invasive imaging modalities: chest X-ray, CT, MR.
• Related complications such as haemoptysis, pneumothorax, respiratory failure
• Pharmacology of inhaled, oral and systemic drugs used
• Chest physiotherapy techniques
• Nutrition
• Indications for lung transplantation
• Nutrition

Skills

• Application of the above knowledge
• Management of respiratory and nonrespiratory manifestations and their complications
• Interpretation of sputum microbiology
• Evaluation of functional status
• Patient education

Behaviour and attitudes

• Communication with patients and family
• Collaboration with a specialised CF-centre
• Multidisciplinary team approach

6: Sleep-related breathing disorders (SRD)

Knowledge

• Definition, classification and aetiology of obstructive sleep apnoea syndrome (OSA),
central sleep apnoea syndrome (CSA), periodic breathing (PB), obesity hypoventilation
syndrome (OHS), periodic limb movement disorder and parasomnias
• Epidemiology and pathophysiology of OSA,CSA,PB,OHS
• Epidemiology, pathophysiology and aetiology of daytime hypersomnolence
• Relevant investigations (including screening over-night oximetry and sleep studies (respiratory polygraphy and polysomnography))
• Complications of OSA, CSA, PB, and OHS
• Methods of treatment (including ventilatory support and CPAP)
• Pharmacology of drugs used

Skills

• Application of the above knowledge
• Non-invasive imaging modalities: chest x-ray, cephalometry, CT, MR
• Pulmonary function tests
• Sleep studies (screening over-night oximetry, respiratory polygraphy and polysomnography)
• Management of SRD (including treatment with CPAP)
• Organisation of services for SRD

Behaviour and attitudes

• Multidisciplinary team approach

7: Smoking cessation/respiratory disease prevention

Knowledge

• Effects of smoking on the health of the individual in relation to lung and other disease
• Burden of smoking on health from a global perspective (health and economy)
• Beneficial effects of smoking cessation in preventing lung and other disease
• Treatment modalities for smoking cessation
• Teaching methods available for smoking cessation
• Effect of vaccination (e.g. against Influenza and Pneumococcus) on lung disease Infection control in relation to preventing lung infections
• Health and safety measures in workplaces

Skills

• Application of the above knowledge
• Management of smoking cessation therapy (pharmacological as well as nonpharmacological) in groups and in individuals
• Performance and supervision of vaccination

• Inspection of workplaces for health hazards

Behaviour and attitudes

• Non judgmental approach

8: Intensive care and high dependency care units

Knowledge

• Definition and classification of conditions leading to a requirement for respiratory intensive care and high dependency care (including end-stage diseases)

• Definition and classification of principles and modes of ventilatory support

• Equipment used in intensive care and high dependency care units

• Respective place of intensive care versus high dependency care in patient management

• Indications for ventilatory support in endstage diseases

• Indications for tracheostomy

• Complications of laryngeal intubation, tracheostomy, non-invasive ventilation, and mechanical ventilation

• Pharmacology of drugs used

• Indication for surfactant therapy

Skills

• Mechanical ventilatory support and its monitoring (invasive and non invasive)

• Intubation

• Tracheostomy

• Management of complications associated with mechanical ventilation (airways, barotraumas, infection, haemodynamic dis
turbances)

• Non-invasive imaging modalities: chest x-ray, ultrasound, CT, fluoroscopy, nuclear techniques

• Palliative care

Behaviour and attitudes

• Multidisciplinary team approach

9: Pulmonary exercise physiology and pulmonary rehabilitation

Knowledge

(a) Pulmonary exercise testing

• Physiological basis of exercise in health

• Pathophysiology of exercise in disease

• Equipment used in pulmonary exercise testing and how it functions

• Personnel involved, and their training

• Quality control and assurance of exercise testing

(b) Pulmonary rehabilitation

• Physiology and pathophysiology underpinning pulmonary rehabilitation

• Evidence supporting a role for pulmonary rehabilitation in the management of patients with COPD and other appropriate respiratory diseases

• Components of a successful pulmonary rehabilitation programme

• Personnel required to set up and run a successful pulmonary rehabilitation service

• Selection of patients who are most likely to benefit from pulmonary rehabilitation

• Cost of setting up a pulmonary rehabilitation programme and its cost effectiveness

• Development and presentation of a business case for pulmonary rehabilitation

• Quality control and assurance of pulmonary rehabilitation

• Smoking cessation methods

Skills

• Performance and interpretation of spirometry

• Interpretation of other lung function tests

• Supervision of pulmonary exercise testing and interpretation of results

Behaviour and attitudes

• Appreciation of the impact of severe COPD and other lung diseases on the life of the patient, including work, driving, sex and exercise

• Non judgmental as to cause

• Multidisciplinary approach

10: Home care (hospital at home and early discharge schemes)

Knowledge

• Benefits of home care/early discharge schemes

• Equipment and personnel required

• Cost effectiveness

• Selection of patients who will benefit from home care/early discharge

• Preparation of Home Care package

• Organisation of Home Visits by healthcare professionals

• Management when home care fails

• Development and presentation of a successful patient selection case for home care/early discharge

• Quality control and assurance

Skills

• Systemic/inhaled drug therapy

• Oxygen therapy

• Non-invasive ventilatory support

• Care of tracheostoma

• Care of pleural drainage

Behaviour and attitudes

• Respecting patient preference
• Multidisciplinary team approach
• Good organisational skills
• Good team leading skills

11: Palliative care

Knowledge

• Indications for palliative care in both malignant and non malignant respiratory disease
• Selection of patients who will benefit from palliative care
• Importance of timing and forward planning
• Practice of palliative care
• Drugs
• Oxygen
• Personnel
• Appropriate physical environment
• Importance of team work
• Legal and ethical issues

Skills

• Recognising who will benefit
• Breaking bad news
• Communicating with patients and relatives honestly and sensitively
• Communicating with the palliative care team

Behaviour and attitudes

• Empathy, sensitivity and good communication skills
• Team work
• Non judgmental approach
• Providing for the spiritual needs of the patient when indicated

12: Imaging techniques

Knowledge

• Basic principles of plain chest radiography, CT, MRI, PET-CT, HRCT, ultrasound and nuclear techniques
• Radiological thoracic anatomy
• Radiological features of common pulmonary and pleural diseases

• Indications for particular imaging techniques - for instance thin-slice CT for parenchymal lung disease, Mediastinal window settings for central lesions and ultrasound for pleural effusions
• Value of imaging other organs/organ systems, for example, bone scans
• Principles of radiation hazards
• Contra-indications for CT with contrast e.g. metformin therapy
• Contra-indications for MRI e.g. pace-maker in situ
• Indications for CT/ultrasound-guided biopsies

Skills

• Interpretation of plain chest radiographs (PA, AP and lateral views)
• Interpretation of CT scans – identification of mass lesions, consolidation, collapse, mediastinal/hilar lymphadenopathy, interstitial lung disease, hyperinflation/air-trapping, bronchiectasis, ground-glass shadowing, pneumothorax and pleural effusions/plaques
• Operation of portable bed-side ultrasound scanner to facilitate pleural aspiration/ drainage

Behaviour and attitudes

• Awareness of radiation risks, especially in relation to pregnancy
• Multidisciplinary approach with radiologists, surgeons, oncologists and pathologists

13: Pulmonary function testing

Knowledge

• Relationship between structure and function
• Ventilation and mechanics of breathing
• Principles of plethysmography
• Bronchial hyper-responsiveness
• Diffusion
• Blood flow
• Alveolar air equation
• Ventilation-perfusion relationships
• Control of ventilation
• ECG and echocardiography
• Cardio-pulmonary relationships
• Respiratory physiology during exercise and at altitude

Skills

• Performance, supervision and interpretation of spirometry
• Performance, supervision and interpretation of pulse oximetry
• Interpretation of plethysmography

- Interpretation of single breath diffusing capacity
- Interpretation of shunt measurement tests
- Performance, supervision and interpretation of cardio-pulmonary exercise testing
- Performance, supervision and interpretation of ECG and echocardiography
- Performance, supervision and interpretation of respiratory muscle function tests
- Performance, supervision and interpretation of bronchial provocation testing
- Arterial puncture and interpretation of blood gas analysis
- Interpretation of flight/altitude assessment results
- Fluoroscopy
- Lung compliance measurement
- Evaluation of impairment/disability

Behaviour and attitudes

- Appreciate importance of quality control
- Learn to check results of individual tests for consistency

14: Bronchoscopy

Knowledge

- Normal and variant bronchial anatomy
- Technical aspects of the flexible and rigid bronchoscope
- Indications and contraindications for bronchoscopy and associated techniques
- Safe sedation and local anaesthesia

Skills

- Safe administration of intravenous sedative
- Safe application of local anaesthetic
- Reversal of excessive sedative effect
- Introduction and manipulation of bronchoscope to subsegmental level
- Monitoring by oximetry
- Bronchial biopsy
- Transbronchial lung biopsy
- Measures to deal with bleeding after biopsy
- Transbronchial needle aspiration
- Broncho-alveolar lavage
- Endobronchial ultrasound examination
- Interventional techniques including fluorescence bronchoscopy, brachytherapy, endobronchial radiotherapy, laser treatment, electrocoagulation, cryotherapy, photodynamic therapy and stent placement
- Rigid bronchoscopy
- Cleaning the bronchoscope
- Infection control

• Transoesophageal ultrasound examination

15: Skin testing (tuberculin and allergy tests)

Knowledge

• Indications for tuberculin and allergy tests
• Types of tuberculin and allergen tests available
• Awareness of contraindications and precautions associated with tuberculin and allergy testing
• Protocols for treatment of anaphylaxis

Skills

• Application of the above knowledge
• Appropriate selection of patients for tuberculin and allergy testing
• Tuberculin and allergy testing, techniques of intra-dermal and prick testing and interpretation of results

16: Patient-oriented approach according to symptoms and signs

Knowledge

• Potential causes of dyspnoea, wheeze, stridor, hoarseness, cough, sputum production, haemoptysis, chest pain, snoring and general symptoms of disease
• Potential causes of abnormal examination findings, such as cyanosis, finger clubbing, chest wall deformities, abnormal breathing patterns, superior vena cava syndrome,Horner's syndrome and abnormal findings on inspection, palpation, percussion and auscultation
• Paraneoplastic syndromes
• Underlying pathological processes leading to abnormal respiratory symptoms and signs
• Appropriate approach to the investigations of patients presenting with abnormal respiratory and general symptoms and signs

Skills

• Application of the above knowledge
• Interpretation of history, examination and investigation findings and ability to create a list of appropriate differential diagnoses
• Appropriate investigation of a patient with respiratory and general symptoms and/or signs and ability to interpret these investigations
• Ability to address patient concerns related to respiratory symptoms and signs

Behaviour and attitudes

• Multidisciplinary approach

17- Psychological factors and quality of life in respiratory diseases

Knowledge

• Hyperventilation syndrome

• Relationship between quality of life, social deprivation and respiratory disease, in particular COPD and tuberculosis

• The social isolation caused by COPD, lung cancer and tuberculosis

• Effects of psychological morbidity on symptom complexes and treatment compliance

• Clinical features and drug treatment of psychiatric syndromes

• Non-pharmacological management of psychological morbidity

• End of life management

Skills

• History-taking in relation to psychological morbidity

• Identification of depression and anxiety states

• Use of tools to measure quality of life e.g. St George's Respiratory Questionnaire

• Use of tools to measure psychological morbidity e.g. Hospital Anxiety and Depression Score

• Appropriate referral to psychologist or psychiatrist

• Appropriate referral to liaison nurses for domiciliary support

Behaviour and attitudes

• Sympathetic and non-judgmental approach to patients

• Willingness to provide social support

• Periodic review in cases of social isolation

18: Respiratory epidemiology

Knowledge

• Definition and classification of epidemiology (e.g. analytical, environmental, etc.) and public health

• Study design

• Disease occurrence measures

• Exposure measures

• Questionnaires

• Functional indices

• Biomarkers

• Determinants/risk factors

• Risk measures

• Basic statistical analyses

• Inference/interpretation

• Introduction to gene - environment interactions

All the examples will be issued by real data on respiratory diseases

Skills

• Application of the above knowledge
• Ability to apply a study design to a research question
• Ability to implement, administer and
analyse a questionnaire
• Ability to think and act in a standardized way
• Ability to interpret epidemiological measures (e.g. prevalence rate, odds ratio, relative risk, attributable risk…)
• Ability to make and interpret simple statistical analyses (e.g. Chi squared test, analysis of variance, multiple logistic regression…)
• Ability to perform and interpret simple gene
- environment interactions
• Knowledge of the epidemiology (distribution and aetiology) of the major respiratory diseases

Behaviour and attitudes

• Multidisciplinary approach (cooperation with biostatisticians and public health administrators)
• Knowledge of relevant diseases processes
• Commitment to regular personal updating of the evolving pattern of environmental and host-related risk factors
• Applying the principle of precaution
• Reading WHO and related documents
• Develop a preventative mentality

Quality Assurance Unit

TantaUniversity
Faculty of Medicine

Department ofChest

Course Specifications
(2nd part , 4th semester)

Chest Diploma Degree

2015-2016

Chest Diploma Degree Course Specifications, 2nd part , 4th semester

University: T anta Faculty: Medicine Department: Chest

A- Administrative Information

1. **Course title: Diploma. Chest Diseases**
2. **Department offering the program: Chest Department**
3. **Department responsible for the course: Chest Department**
4. **Course code: 7007**
5. **Level: 2nd part, 4th semester: 9 credit-hours. (15 weeks)**
6. **No. of Credit / taught hours:**

The course	Obligatory (Theoretical)	Practical	Scientific activity	Elective
Credit hours	4 hours	3hours	1 hour	1 hours
Taught hours	60 Hours	90 hours	60 hours	15 hours

7. **Authorization date of course specification: 2/2/2016**

B- Professional Information

1 – Overall Course aims

Purpose of the curriculum:

The purpose of this curriculum is to provide the basis for training in the specialty of Chest Diseases 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.

Professionalism is a difficult quality to define. One definition proposed by the Royal College of Physicians is “a set of values, behaviors’ and relationships that underpin the trust that the public has in the profession.” Professionalism includes the ability to deal with diagnostic and therapeutic uncertainty. Whilst this curriculum attempts to spell out the knowledge, skills attitudes and behaviors’ that underpin training in Chest Diseases, the attributes which make up the “professional” specialist are much more than the simple sum of all these added together. The

progression from candidate to professional requires, in addition to the simple acquisition of the building blocks described in this curriculum, the development of a high degree of personal and professional maturity and this requires time, experience and the internalization by the candidate of a whole variety of attributes that he/she is exposed to in the work place. In part, this also involves learning by example, such that it is incumbent on all trainers to ensure that their candidates are exposed to appropriate work place and learning environments.

OBJECTIVES OF CHEST DISEASES SPECIALTY CURRICULUM:

The candidate will be given the opportunity to become competent in:

1. Establishing a differential diagnosis for patients presenting with clinical features of respiratory disease by appropriate use of history, clinical examination and appropriate investigations.
2. Applying knowledge derived from the appropriate basic sciences which are relevant to Chest Diseases.
3. Applying appropriate and sufficient knowledge and skills in the diagnosis and management of patients with respiratory disease to ensure safe independent practice at NHS independent Consultant Specialist level.
4. Developing a management plan for the "whole patient." This should include not only the appropriate treatment but also take into account health promotion, disease prevention, long-term management plans and palliative care medicine where appropriate.

2 – Intended learning outcomes (ILOs):

a. knowledge and understanding:

By then, end of the Course the candidate will have gained knowledge and systematic understanding of:

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

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

a.3. Discuss 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 .

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. Discuss 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 Course 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. To 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. Clinical assessment of different cardiac, renal and hepatic diseases and 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 Course the trainee will be able to:

(c.1.) Communication skills:

(c.1.1.) Patient- doctor relationship

c.1.1.1. Apply respect to all patients irrespective of their socioeconomic levels, culture or religious beliefs and use language appropriate to the patient's culture.
c.1.1.2. Conduct patient interviews that are characterized by patience and attentive listening.
c.1.1.3. 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.1.1.4. Write clear concise patient records: admission sheet, progress notes, physician orders, and referrals for consultation, discharge summary and follow-up notes.
c.1.1.5. Use appropriate skills and strategies of communication during difficult situations such as giving bad news and dealing with angry patients.
c.1.1.6. Discuss medical errors or professional mistakes honestly and openly in a way that promotes patient trust and self-learning.

(c.1.2.) Relation to collaboration with healthcare professionals:

c.1.2.1. Communicate effectively with other health care professionals to maximize patient benefits and minimize the risk of errors.
c.1.2.2. Respect the role and contributions of other health care professionals regardless of degree or occupation.
c.1.2.3. Undertake appropriate formal and informal consultations with colleagues and perform appropriate referrals to other health care professionals.
c.1.2.4. Write a concise and informative report on patient(s) conditions.
c.1.2.5.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.1.2.6. General measures to reduce spread of infection in hospital wards

d. General and transferable skills:

by the end of the course 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 by consistently doing the following:

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-Course contents

1. Obligatory hours

4 credit hours = 60 taught hours distributed as follows:

1. Thoracic tumours 5 hours
2. Respiratory infections excluding tuberculosis and non-tuberculous mycobacterial diseases 5 hours
3. Tuberculosis (TB) including extrapulmonary TB and non-tuberculous (opportunistic) mycobacterial diseases 5 hours
4. Pulmonary vascular diseases 5 hours
5. Occupational and environmental diseases 4 hours
6. Diffuse parenchymal (interstitial) lung diseases and orphan lung diseases5 hours
7. Pleural diseases 4 hours
8. Diseases of the chest wall, respiratory muscles , diaphragm 3 hours
9. Mediastinal diseases 3 hours
10. Pleuro-pulmonary manifestations of systemic/extrapulmonary disorders4 hours
11. Genetic and developmental disorders 3 hours
12. Allergic and eosinophilic lung diseases excluding asthma 3 hours
13. Respiratory manifestations of immunodeficiency disorders3 hour
14. Lung transplantation 3 hours
15. Pleural procedures 3 hours
16. Pediatric pulmonary Medicine *2 hours*

2. Practical training:

3credit hours =Total 90 hours .

Clinical problems that must be observed, managed under supervision & managed independently by Pulmonary Medicine candidate

Pneumonia
Pulmonary & extra pulmonary tuberculosis
Pleural effusion & empyema
Pneumothorax
Interstitial lung diseases especially IPF and sarcoidosis
Pulmonary embolism
Pulmonary hypertension and corpulmonale
Lung Neoplasm

Mediatinal Lesion
Pulmonary manifestations of systemic diseases
Pregnancy and different chest diseases
Patients who are in need for pulmonary rehabilitation

3. Scientific activity

1credit hour =Total 60 hours.

a- Seminars and bedside teaching:

1 taught hour /week

b- Workshops, Congresses, Thesis discussion and Chest conferences:

N.B: Those which have credit hours will be accepted as it is.

c- Practical procedures:

Each procedure has 1 scientific hour.

The candidate should fulfill at least 10 different procedures.

Procedure/ Investigation	Level of participation	Level of Competence
Spirometry	Interpret Report	III
ABG	Attend Interpret Perform	III
Thoracocentesis	Attend Perform	III
FOB: BAL	Attend Assist Perform	III
FOB: NB	Attend Assist Perform	II
Non invasive ventilation	Attend Assist Perform	III
Invasive ventilation	Attend Assist	II
Endotracheal intubation	Attend assist Perform	II

Procedure/ Investigation	Level of participation	Level of Competence
Polysomnography& Sleep studies	Attend Perform	II
Pulmonary rehabilitation & physiotherapy	Attend assist Perform	III
Nutritional support in ICU	Attend assist Perform	III
CXR & CT	Interpret Report	III
Thoracoscopy	Attend Observe	II
Intercostal intubation & pleural biopsy	Attend & observe	II
ECG & Echocardiography	Perform & interpret Attend & interpret	III II
Rigid bronchoscopy	Attend & observe	II
Cardio-pulmonary resuscitation	Attend & assist Perform	III
Advanced pulmonary functions	Attend & observe Interpret	II

Definition of the levels of competence

Level I: Experience of selecting the appropriate diagnosis modality & interpreting the results or choosing an appropriate treatment for which the patient should be referred. This level of competence does not include performing a technique.

Level II: Practical experience, but not as an independent operator (has assisted in or performed a particular technique under the guidance of a superior staff).

Level III: Is able to independently perform the technique or procedure unaided.

4-Teaching and learning methods

The following methods of teaching and learning will be used:

1) Apprenticeship learning (experiential learning):

- Observation
- Assisting
- Participation
- Supervised Performance
- Independent Performance

2) Formal Teaching

- Lectures
- Seminars
- Clinical ward rounds
- Crash courses
- Workshops

3) Self study

- Library
- Textbook
- Journals
- Internet

4) Meetings and Conferences

5) Supervised Research

5-Student Assessment

The general rules and regulations of assessment approved by Tanta University.

End semester assessment:

- Log book:

All candidates must successfully fuffill at least 75% attendance of theoretical, practical training and scientific activity.

End semester exam :

At the 15 th week, Allcandidates must successfully pass exam in form of MCQ exam for theoretical and practical training.

6- Listof references

6.1 Course notes

6.2 Text book

Fishmann's Chest Diseases
Murray Pulmonary Medicine
Crofton and Douglas Pulmonary Medicine

6.3 Recommended books

6.4 Periodicals and web site

American Review Respiratory and Intensive Care Medicine
European Respiratory Journal
Chest
Thorax

7-Other resources/ facilities required for teaching and learning to achieve the above ILOs

None

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

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

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

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

The ILOs of the4th semester course specifications included in the appendix are integral part of this course program.

Appendix

A. Practical training ILOs

1 Breathlessness

Objective

- Be competent to carry out specialist assessment of severity and form a structured differential diagnosis leading to appropriate further investigation and management
- Candidate must have experience (minimum of 2 years) in dealing with patients presenting withchronic symptoms in outpatient department

Or acute symptoms in acute/emergency admissions unit

- Be able to manage the breathless patient effectively

Knowledge

- Causes of breathlessness
- Differentiate cardiac, respiratory, neuromuscular and metabolic causes
- Know and understand pathogenesis of causes
- Know and understand management/treatment
- Pharmacology of drugs used
- Relevant guidelines

Skills:

- Performance and interpretation of spirometry (competence)
- Interpretation of other appropriate Lung Function Tests (competence)
- Interpretation of Chest Radiology:
  - Chest X-Ray
  - V/Q scans
  - Chest CT scans (competence))
- Performance and interpretation of arterial blood gases (competence)
- Use of inhaled and nebulised drug therapy (competence

2 Cough

Objective

- Be competent to carry out specialist assessment and form a structured differential diagnosis of causes leading to appropriate further investigation and management
- Candidate must have experience in assessing patients referred to the outpatient department with cough (minimum of 2 years)
- Be able to manage the patient with cough effectively

Knowledge

- Causes of cough with:
  Normal CXR
  Abnormal CXR
- How to formulate an appropriate differential diagnosis
- Appropriate investigation of cough, including specialist studies
- ENT causes
- Management/treatment of cough linked to underlying diagnosis
- Pharmacology of drugs used
- Relevant guidelines

Skills:

- Performance and interpretation of spirometry.
- Interpretation of other appropriate Lung Function Tests
- Interpretation of Chest Radiology
- Special investigations, including bronchoscopy
- Use of inhaled and nebulised drug therapy.

3 Haemoptysis

Objectives

- Be competent to undertake specialist assessment and form a structured differential diagnosis in patients with haemoptysis leading to appropriate further investigation and management
- Candidate must have experience of patients presenting with:
  - haemoptysis in outpatient setting
  - acute severe haemoptysis in acute/emergency admissions unit setting (minimum of 2 years)
- Be able to manage the patient with haemoptysis effectively

Knowledge

- 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

Skills:

- Interpretation of Chest Radiology
- Bronchoscopy
- Resuscitation, including basic airway skills

4 Pleuritic Chest Pain

Objectives:

- Be competent to undertake specialist assessment and form structured differential diagnosis in patients with pleuritic chest pain
- Candidate must have experience in dealing with patients presenting with
  -chronic symptoms in outpatient department
  -acute symptoms in acute/emergency admissions unit
- Be able to manage the patient with pleuritic chest pain effectively

Knowledge:

- Causes of pleuritic chest pain
- Understand pathogenesis of causes
- Differential diagnosis of causes

- ❖ How to formulate a plan of investigation, including appropriate use of ultrasound, closed and CT-guided pleural biopsy and Medical Thoracoscopy
- ❖ Treatments and Management
- ❖ Pharmacology of drugs
- ❖ Relevant guidelines

Skills:

- ❖ Interpretation of Chest Radiology including Chest XRay, V/Q scans, CT scans, CTPA scans
- ❖ Pleural biopsy
- ❖ Ultrasound
- ❖ Medical Thoracoscopy (knowledge of; some candidates may gain experience)

5 Abnormal Chest X-Ray

Objectives:

- Be competent to assess and form differential diagnosis in patients with:
  -localized abnormalities on chest x-ray, for instance mass lesions
  -diffusely abnormal chest x-ray, for instance interstitial pulmonary fibrosis
- Candidate must have experience in dealing with patients presenting with the following throughout training:
  -abnormal chest x-ray in outpatient department
  -abnormal chest xray in acute/emergency admissions unit
- Be able to formulate an appropriate plan for investigation and management

Knowledge:

- Causes of abnormal Chest X-Ray
- Differential diagnosis of causes
  Know and understand pathogenesis of causes
- Know how to formulate plan for further investigation and management

Skills: Interpretation of Chest Radiology

B. Practical Procedures ILOs

1– Tuberculin Skin Tests

Objective

- Be able to perform (competence/experience) and interpret (competence) tuberculin skin tests

Knowledge

- Types of tuberculin tests
- Indications for tuberculin tests
- How to read tuberculin tests
- Relevant guidelines

- Understand relative roles of tuberculin skin tests and gamma - interferon tests

Skills

- Perform (competence/experience) and read/interpret (competence) tuberculin tests
- Document sufficient patients in training record

2 – Intensive Care (ICU) and High Dependency Units (HDU)

Objective

- Be competent to recognize patients who will benefit from intensive care or high dependency units
- Have knowledge and experience of the care provided in intensive care and high dependency units
- Candidate may care for inpatients in ICU and HDU during their clinical placements. Candidate must also spend at least 60 working days in an intensive care unit approved by the Regional Chest Diseases STC/PD. Ideally this should occur in one block. If this is not possible, 4 units of 15 consecutive working days is acceptable
- Candidates may have to be seconded to a specialized unit to gain experience as this is not available in all placements

Knowledge

- Conditions requiring ICU and HDU, particularly Acute Respiratory Distress Syndrome (ARDS) and septic syndromes
- Knowledge of measures used to monitor and support all vital organ systems in an intensive care unit
- Requirements for an adequately staffed and equipped unit
- Interaction of anaesthetists physicians, surgeons, nurses, microbiologists, physiotherapists, dieticians
- Role of the multidisciplinary team in ICU and HDU
- Knowledge of the interface between ICU/HDU and the general/specialty wards, including outreach services
- Relevant guidelines

Skills

- ALS skills (competence)
- Basic airway skills (competence)
- Ability to advise on and manage respiratory patients on ICU and HDU (competence)
- Ability to advise on the respiratory care of general patients on ICU and HDU (competence)

- Ventilatory support modalities (competence in C-PAP and NIV; experience of mechanical ventilation and mechanical ventilation strategies)
- Chest drain insertion (competence)
- Bronchoscopy (competence)

3. Closed Pleural Biopsy and Thoracic Ultrasound

Objective

- Be safe, efficient and competent at pleural biopsy (optional)
- Have knowledge of the technique of physician practiced thoracic ultrasound

Knowledge:

- Indications for closed pleural biopsy
- Various techniques of closed pleural biopsy, both blind and image guided
- The role of physician - practised thoracic ultrasound
- Patient consent and explanation of risks and benefits
- Relevant guidelines

Skills:

- Be competent in safely performing closed blind pleural biopsy. A minimum of 10 should be recorded in the training record
- Initially candidate should be under the supervision of a senior colleague skilled in the performance of this technique and then perform independently when competent
- Some candidates may wish to acquire training in thoracic ultrasound.

C. Obligatory ILOs

1: Thoracic tumours (TT)

Knowledge

• Definition, classification and aetiology of TT: lung cancer (LC), mesothelioma (M), metastatic TT (MTT), benign intrathoracic
tumours, mediastinasinal (MT), chest wall tumours, sarcoma and lymphoma (L)
• Epidemiology of TT
• Risk factors for LC, M and L
• Clinical symptoms, syndromes and physical signs of TT including paraneoplastic syndromes

• Relevant investigations: noninvasive (chest X-ray, ultrasound, fluoroscopy, CT, MR, nuclear techniques, PET-CT) and invasive (sampling methods for cytology and histology).
• Tumour markers
• Histological and TNM classification of TT
• Performance status
• Therapeutic modalities in LC, M, MT and in other TT: chemotherapy (including targeted molecular therapy), radiotherapy, interventional
bronchoscopic techniques, palliative therapy, best supportive care
• Indications for surgical interventions (pathological assessment, functional assessment and pre-operating staging)
• Complications of surgery, chemotherapy and radiotherapy
• Prognosis (survival, functional consequences, disability)
• Rehabilitation

Skills:

• Application of the above knowledge
• Evaluation of functional status
• Sputum induction
• Flexible bronchoscopy, rigid bronchoscopy
• Endobronchial ultrasound
• Transbronchial lung biopsy
• Transbronchial needle aspiration
• Percutaneous needle biopsy
• Fine needle lymph node aspiration for cytology
• Pleural ultrasound imaging
• Thoracocentesis
• Interventional bronchoscopic techniques
• Medical thoracoscopy (level 2#)
• Pleural drainage
• Chemotherapy, management of adverse events
• Palliative care

Behaviour and attitudes

• Multidisciplinary approach

2: Respiratory infections excluding tuberculous and non-tuberculosis mycobacterial diseases

Knowledge

• Definition, classification and aetiology of NTBRI: upper respiratory tract infections

(URTI), lower respiratory tract infections (LRTI) including pneumonias – community acquired pneumonia (CAP), nosocomial pneumonia (NCP), pneumonia in immunocompromised host

• Epidemiology of NTBRI (microbiology, age related factors, geographical issues, occupational considerations, comorbidities, immunological status)

• Clinical manifestations of viral (including epidemic viral), bacterial, fungal and parasitic infection

• Relevant investigations: noninvasive (sputum induction, chest X-ray, fluoroscopy, CT, ultrasound), invasive (bronchoscopy, needle aspiration for microbiological sampling)

• Differential diagnosis of URTI, LRTI, pneumonias of viral, bacterial, fungal and parasitic origin including typical versus atypical pneumonia

• Pneumocystis jiroveci pneumonia

• Related complications such as lung abscess, empyema and sepsis

• Relevant therapeutic measures including antibiotics and other antimicrobials and susceptibility testing

• Criteria for hospitalisation and referral to ICU in CAP

• Prognosis, predictive factors for high risk of death

• Prevention of NTBRI including vaccination and infection control

Skills

• Application of the above knowledge

• Evaluation of functional status and severity of disease

• Taking samples for microbiological diagnosis (sputum, blood, pleural fluid, bronchoscopic samples, percutaneous needle aspiration)

• Thoracocentesis (diagnostic and therapeutic)

• Local pleural treatment measures for empyema (pleural drainage, pleural irrigation and fibrinolytic treatment)

• Vaccination

Behaviour and attitudes

• Multidisciplinary approach

3: Tuberculosis (TB) includingextrapulmonary TB (EPTB) and non-tuberculous (opportunistic) mycobacterial diseases (NTBMD)

Knowledge

(a) Tuberculosis:

• Definition, classification and aetiology

• Epidemiology and pathophysiology

• Transmission of mycobacteria

• Risk factors for developing TB

• Pathogenesis of TB (events in nonimmunised host, immunologic response to M. tuberculosis,
exogenous versus endogenous infection, latent TB infection)
• Immunological features of latent TB (tuberculin sensitivity, interferon gamma release)
• TB in immunocompromised host
• General manifestations of TB
• Clinical and radiological features of pulmonary TB
• Bacteriological evaluation including molecular techniques
• Treatment of TB (general principles, drugs, combination regimens)
• Special problems in treatment (multidrug resistant TB, extensively resistant TB, pregnancy and breast feeding, TB and HIV infection, conditions interfering with or increasing the risk of potential adverse events of anti-TB drugs, latent TB infection and chemotherapy of LTBI)
• Microbiological, clinical, laboratory and radiological control in the course of therapy.
Supervision of chemotherapy, directly observed therapy (DOT)
• Adjunctive therapy (resection (if appropriate), corticosteroids, drugs to prevent and treat adverse events)
• Surveillance in organised TB control programmes including Advocacy, Communication and Social Mobilisation for TB Control (ACSM)
• Prevention of TB (isolation of smear positive patients including use of negative pressure facilities, BCG vaccination, preventive treatment of persons exposed to MTB and
MDR MTB)
• Prognosis of pulmonary TB
• National and WHO regulations in relation to TB as infectious disease

(b) Extra-pulmonary tuberculosis:

• Organs involved (lymphatic system, pleura, pericardium, genitourinary system, bones and joints, abdominal, central nervous system, skin and eyes)
• Relevant imaging methods
• Sampling methods for bacterial diagnosis
• Therapeutic possibilities in EPTB other than anti TB chemotherapy including surgical treatment
• Prognosis of specific organ manifestations of TB
• Disability due to TB
• Rehabilitation

(c) Non-tuberculous (opportunistic) mycobacterialdisease

• Bacteria causing NTBMD (M.aviumcomplex, M. Kansasii, other rapidly growingmycobacteria)
• Epidemiology of NTBMD and its relation to HIV infection
• Organ manifestations and clinical characteristics of NTBMD
• Criteria for diagnosis
• Therapeutic regimens used in NTBMD
• Prognosis
• Prevention of NTBMD
• Indications for surgical treatment

Skills

• Application of the above knowledge
• Sampling for microbiological examination (sputum induction, gastric washings, thoracocentesis, bronchial-, transbronchial percutaneous-, pleural- and lymph node biopsy)
• Tuberculin skin testing
• Sputum microscopy

Behaviour and attitudes

• Inform and educate patient about infective nature of the disease so that they comply with guidelines in the course of longterm treatment
• Be aware of the psychological and sociological aspects of long term disease management
• Multidisciplinary approach, especially in the case of EPTB

4: Pulmonary vascular diseases (PVDs)

Knowledge

• Definition, classification and aetiology of PVDs
• Physiology and pathophysiology of the pulmonary circulation
• Physiology and pathophysiology of coagulation and thrombosis
• Genetic and acquired risk factors for PVDs
• Current epidemiology and relevant pathology of PVDs
• Respiratory and non-respiratory clinical manifestations
• Respiratory and non-respiratory complications.
• Relevant investigations (lab tests (D-dimer), scintigraphy, CT, MRI, pulmangiography, right heart catheterisation)
• Indications for, and special problems of lung transplantation in selected PVD patients, including psychosocial
• Indication for surgical interventions, e.g., in pulmonary embolism (thrombectomy)
• Pharmacology and interactions of drugs used in the treatment of PVDs

Skills

• Application of the above knowledge
• ECG, echocardiography and imaging interpretation (scintigraphy, CT-scan, angiography).
• Evaluation of functional status
• Right heart catheterisation
• Assessment of severity of respiratory and systemic involvement
• Prevention, diagnosis and treatment of both cardiovascular and systemic complications
• Identification and management of patients with end-stage disease
• Assessment of eligibility for lung transplantation/ thrombectomy

Behaviour and attitudes

• Multidisciplinary approach

5: Occupational and Environmental Diseases

Knowledge

• Definition, classification and aetiology of occupational/environmental lung diseases
• Epidemiology and biological, immunological and inflammatory responses to respiratory irritants (fumes, chemicals, fibres, minerals, and particulates)
• Physiology and pathophysiology of lung deposition and damage
• The biological, immunological, and inflammatory responses to respiratory irritants (fumes, chemicals, fibres, minerals, and particulates)
• Environmental exposure and individual susceptibility
• Hazards encountered in both the industrial and rural environment
• Acute and chronic respiratory effects
• Respiratory and non-respiratory manifestations.
• Specific health policy and legislation
• Environmental and individual protective measures
• Basic principles of prevention and treatment
• Psychosocial implications of occupational/ environmental lung diseases

Skills:

• Application of the above knowledge
• Ability to take a detailed occupational history.
• Assessment of workplace safety and/or level of exposure to respiratory hazards
• Assessment of familial and individual susceptibility
• Imaging procedures (chest x-ray including ILO/ BIT classification) HRCT-scan, nuclear techniques
• Evaluation of functional status and of disability
• Performance and interpretation of bronchial provocation testing

• Prevention and early diagnosis
• Diagnosis of specific occupational/ environmental lung diseases
• Running of specialised outpatient services
• Prevention, diagnosis and treatment of non-respiratory complications
• Competent communication with patients, workers, employers, and other occupational professionals

Behaviour and attitudes

• Multidisciplinary approach (cooperation with industrial hygienists, toxicologists, internists, and public health administrators)
• Knowledge of relevant industrial processes, control of air pollution, and epidemiological studies
• Commitment to regular personal updating of the evolving pattern of industrial processes and technologies

6: Diffuse parenchymal(interstitial) lung diseases (ILD) and orphan lung diseases (OLD)

Knowledge

• Definition, classification and aetiology of ILD and OLD
• Epidemiology and pathophysiology
• Basic biology and immunology of ILD and OLD, including humoral and cellular mechanisms
• Relevant investigations: non-invasive (chest X-ray, high resolution CT-scan, lung function tests), invasive (broncho-alveolar lavage (BAL), transbronchial lung biopsy (TBLB), and VATS biopsy)
• Pulmonary and extrapulmonary manifestations of specific ILD and OLD
• Pharmacology and interactions of drugs used in the treatment of ILD and OLD

Skills

• Application of the above knowledge
• Interpretation of chest X-ray and high resolution CT-scan
• Evalution of functional status
• Bronchoscopy incl. BAL and TBLB
• Prevention and treatment of cardiovascular and and systemic involvement
• Assessment of eligibility for lung transplantation

Behaviour and attitudes

• Multidisciplinary approach

7: Pleural diseases (PD)

Knowledge

• Definition, classification and aetiology of pleural effusions (serothorax, chylothorax, haemothorax, empyema)
• Epidemiology and pathophysiology of infectious, inflammatory, and neoplastic pleural disorders
• Macroscopic appearance of pleural fluids
• Distinction between transudative and exudative pleural effusions
• Definition, classification and aetiology of pleural thickening including pleural plaques
• Definition, classification and aetiology of pneumothorax (primary and secondary)
• Related complications such as tension pneumothorax
• Relevant investigations: non-invasive (chest X-ray, ultrasound, fluoroscopy, CT, MR, nuclear techniques, pulmonary function tests) and invasive (thoracentesis and biopsy techniques)
• Relevant therapeutic measures including antibiotics, fibrinolytics and pleurodesis
• Indications for surgical intervention

Skills

• Application of the above knowledge
• Ultrasound
• Evaluation of functional status
• Thoracentesis (diagnostic and therapeutic)
• Pleural biopsy
• Pleural drainage
• Medical thoracoscopy (pleuroscopy)
• Pleurodesis (talc and other chemical agents)
• Chemotherapy and other local or systemic anti-tumour therapy in selected patients (malignant pleural effusion including mesothelioma)
• Irrigation and fibrinolytic treatment for empyema

Behaviour and attitudes

• Multidisciplinary approach

8: Diseases of the chest wall, respiratory muscles and diaphragm (CW, RM, D)

Knowledge

• Definition, classification and aetiology of chest wall diseases including kyphoscoliosis, ankylosing spondylitis, flail chest, pectus
excavatum, and pathological effects of thoracoplasty
• Definition, classification and aetiology of diseases of the respiratory muscles (hemiplegia, poliomyelitis, and generalized neuromuscular diseases)

• Definition, classification and aetiology of diseases of the diaphragm, including diaphragmatic paralysis, hiccups, herniae
• Epidemiology and pathophysiology of diseases of CW, RM, and D
• Differential diagnosis of acute chest pain
• Related complications such as respiratory failure
• Relevant investigations: non invasive (chest X-ray, ultrasound, fluoroscopy, CT, pulmonary function tests)
• Relevant therapeutic measures including ventilatory support
• Indications for surgical intervention

Skills

• Application of the above knowledge
• Ultrasound
• Evaluation of functional status
• Invasive and non-invasive ventilatory support
• Home care (oxygen therapy, home ventilation)
• Palliative care

Behaviour and attitudes

• Multidisciplinary approach

9: Mediastinal diseases (MD)

Knowledge

• Definition, classification and aetiology of mediastinal diseases including tumours and cysts of the mediastinum, mediastinitis, Mediastinal fibrosis, and pneumomediastinum
• Epidemiology and pathophysiology of MD
• Related complications such as superior vena cava syndrome
• Relevant investigations: non-invasive (chest x-ray, fluoroscopy, CT, MR, pulmonary function tests) and invasive (bronchoscopy including transbronchial needle aspiration and endobronchial ultrasound)
• Relevant therapeutic measures
• Indications for surgical intervention (mediastinoscopy, mediastinotomy, VATS)

Skills:

• Application of the above knowledge
• Evaluation of functional status
• Bronchoscopy
• Transbronchial needle aspiration
• Endobronchial ultrasound

Behaviour and attitudes

• Multidisciplinary approach

10: Pleuro-pulmonary manifestations of systemic extrapulmonary disorders

Knowledge

• Definition, classification and aetiology of pleuro-pulmonary manifestations of systemic disease: pneumonitis, pleurisy, fibrosis, pleural thickening, pneumothorax
• Epidemiology and pathophysiology of pleuro-pulmonary manifestations of systemic disorders (including drug-induced pleuro-pulmonary diseases)
• Biological blood parameters for diagnosis of systemic diseases
• Relevant investigations: non-invasive (laboratory values, chest x-ray, ultrasound, CT, MR, nuclear techniques, lung function tests) and invasive (bronchoscopy including
broncho-alveolar lavage, TBLB, thoracentesis, pleural biopsy)
• Related complications
• Relevant therapeutic measures including pharmacology of drugs used

Skills

• Application of the above knowledge
• Diagnosis of underlying diseases
• Non-invasive imaging modalities: chest x-ray, fluoroscopy, ultrasound, nuclear techniques, CT, MR
• Evaluation of functional status
• Broncho-alveolar lavage and TBLB
• Thoracentesis
• Pleural biopsy, pleural drainage
• Medical thoracoscopy
• Management of immunosuppressive drugs

Behaviour and attitudes

• Multidisciplinary team approach

11: Genetic and developmental disorders (GDD)

Knowledge

• Definition and classification of GDD
• Clinical manifestations of Primary Ciliary Dyskinesia (PCD), Alpha-1-Antitrypsin Deficiency (A1ATD) and genetic surfactant deficiency disorders (GSDD)
• Genetic background of PCD, A1ATD and GSDD
• Developmental causes of upper and lower respiratory tract malformations
• Late (adolescent/adult) manifestations of respiratory tract malformations
• Morphological and functional diagnosis of GDD (imaging modalities, lung function testing)
• Therapeutic options for managing respiratory manifestations.

- Management of outpatients and of hospitalised patients.
- Treatment of respiratory exacerbations and complications
- Diagnosis and management of non respiratorysequelae and complications
- Long term sequelae and the residual morbidity of respiratory malformations after management and surgery in infancy and childhood

Skills

- Application of the above knowledge
- Evaluation of functional status
- Flexible bronchoscopy including BAL and TBLB
- Replacement therapy using alpha-1- antitrypsin and surfactant

Behaviour and attitudes

- Knowledge of the special psychological aspects of long term disease management
- Cooperation with paediatric respiratory physicians and thoracic surgeons

12: Allergic and eosinophilic lung diseases excluding asthma

Knowledge

- Definition, classification and aetiology of non-asthma allergic and eosinophilic lung diseases including hypersensitivity pneumonitis, Churg Strauss Syndrome, acute and chronic eosinophilic pneumonia, allergic bronchopulmonaryaspergillosis and drug-induced disease
- Epidemiology and pathophysiology of non-asthma allergic and eosinophilic lung diseases
- Relevant investigations (including nasal provocation testing and methacholine/histamine bronchoprovocation testing, sputum induction, serology includingANCA and aspergillus/avian precipitins, transbronchial/VATS lung biopsy)
- Pharmacology of drugs used

Skills

- Application of the above knowledge
- Ear, nose and throat examination
- Assessment of the impact of rhinitis on health related quality of life
- Management of allergic disorders other than asthma and of eosinophilic lung diseases (including management of rhinitis)
- Broncho-alveolar lavage and lung biopsy
- Nasal provocation testing, bronchoprovocation testing, sputum induction
- Non-invasive investigations (including allergen skin tests, serum allergen tests)
- Pulmonary function tests
- Control of risk factors

13: Respiratory manifestations of immunodeficiency disorders

Knowledge

- Clinical features of respiratory infections in patients with

1) congenital immunodeficiency (immunoglobulin deficiency syndromes and defects in cell-mediated immunity) and
2) acquired immunodeficiency (HIV/AIDS, organ transplantation, lymphoma, cytotoxic chemotherapy, immunosuppressive drugs, malnutrition)

• Emphasis on important pathogens such as Pneumocystis jiroveci(carinii) and cytomegalovirus
• Clinical features of non-infectious respiratory manifestations (pulmonary oedema, pulmonary haemorrhage and infarction, malignancy, autoimmune vasculitis, radiation and drug-induced pneumonitis)
• Relevant investigations:
noninvasive (chest X-ray, CT, ultrasound, pulmonary function testing, microbiology of spontaneous and induced sputum,
invasive (bronchoscopy, broncho-alveolar lavage, transbronchial biopsy, thoracentesis and examination of pleural fluid)
• Relevant antibiotic therapy
• Intravenous immunoglobulin therapy
• Prognostic and predictive outcome factors
• Preventative measures e.g. reverse-barrier nursing and septrin prophylaxis

Skills

• Application of above knowledge
• Sputum induction technique
• Bronchoscopy with BAL/transbronchial biopsy
• Ultrasound
• Thoracentesis
• Relevant pulmonary function tests e.g. transfer factor in suspected pulmonary haemorrhage

Behaviour and attitudes

• Multidisciplinary approach with haematologists, oncologists, clinical immunologists, transplant physicians and microbiologists

14: Lung transplantation

Knowledge

• Diseases treatable by lung transplantation (IPF, CF, bronchiectasis, PPH, COPD, sarcoidosis)
• Types of lung transplant (single, double and heart-lung)
• Surgical considerations
• Criteria for patient selection (age, psychological /physical/nutritional status and prognosis)
• Pre-transplant preparation and monitoring (pulmonary rehabilitation and NIV)
• Donor selection

• Immunosuppressive regimens
• Principles of monitoring immunosuppressive drug therapy
• Principles of transbronchial lung biopsy for detection of rejection
• Diagnosis and treatment of acute and chronic complications, including rejection
• Obliterative bronchiolitis
• Diagnosis and treatment of opportunistic infections
• Prognosis

Skills

• Application of above knowledge
• Assessment of patient suitability for transplantation (physical and psychological)
• Nutritional supplementation
• Immunosuppressive treatment of rejection
• Bronchoscopy with bronchoalveolar lavage and appropriate imaging for detection of opportunistic infection
• Interventional bronchoscopic techniques such as stent placement

Behaviour and attitudes

• Multidisciplinary approach with thoracic surgeons, microbiologists and psychologists.

15: Pleural procedures

Knowledge

• Relevant anatomy of the chest wall and lungs
• Indications for pleural ultrasound, thoracentesis, closed pleural needle biopsy, pleuroscopy (medical thoracoscopy), intercostal tube drainage and pleurodesis
• Equipment required for pleural ultrasound, thoracentesis, closed pleural needle biopsy, pleuroscopy (medical thoracoscopy), intercostal tube drainage and pleurodesis
• Assessment of suitability for a pleural procedure, including knowledge of the contraindications for pleural procedures and awareness of the possible complications.
• Relevant pathology
• Appearance of anatomy and pathology with pleural ultrasound imaging
• Macroscopic appearance of pleural fluid and appropriate laboratory tests on it
• Pharmacology of drugs required for pleural procedures
• Knowledge of different uses of pleuroscopy (medical thoracoscopy)
• Indications for surgical intervention

Skills

• Application of the above knowledge
• Patient consent and explanation of the risks and benefits associated with pleural procedures

• Arrange and interpret relevant tests associated with selecting patients for a pleural procedure
• Performance of pleural ultrasound imaging and interpretation of pleural ultrasound images, correlation with other imaginag modalities
• Performance of thoracentesis, closed pleural needle biopsy, pleuroscopy (medical thoracoscopy, and pleurodesis
• Performance of intercostal tube drainage, ability to secure correctly the intercostals tube and to confirm suitable position
• Appropriate management of a patient with a chest drain

Behaviour and attitudes

• Awareness of the limitations of pleural procedures
• Multidisciplinary approach

16. Pediatric respiratory Medicine

Knowledge

- Lung Growth and Development
- Imaging the pediatric lung
- Interpreting Lung Function in Children
- Asthma phenotypes in children
- Interstitial lung disease in children
- An Update on Tuberculosis in Children
- Clinical and Radiological Approach of congenital lung diseases
- The Genetics of Respiratory Diseases.

Skills:

- To describe the appearance and structuralgrowth of the lung during foetal life, infancy and childhood including airways, alveoli and vasculature.
- To recognize what does 'phenotype' mean in this context.
- To examine how disease processes and their treatment may affect lung development and how this may ultimately lead to an essentially normally functioning lung or one that is grossly abnormal.

Quality Assurance Unit

Tanta University
Faculty of Medicine

Department of Chest Diseases

Program Specifications

Chest Diploma Degree

2015-2016

Chest Diploma Degree,Program Specifications

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

A- Basic information

1–Program title: Chest Diseases

2-Program Code: CHEST 700

3- Program coordinator: Prof.Dr. AmgadAbdelraof

4-program internal evaluators:Prof. Dr. Ali Abdella

5-program external evaluators: Prof. Dr. Ramadan Nafee

6-Date of approval: 2/2/2016

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 may/ 2010 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:

4 curriculum structure and content:

4-a- Program duration: at least 24 month

First Part: 18 credit-hours

Divided equally to 2 semesters (9 credit-hours eachsemester).

Second Part: 18 credit-hours

Divided equally to 2 semesters (9 credit-hours eachsemester)

4-b- Program structures:

First Part: 18 credit-hours =divided as following:

1st course:The following points have to be covered:

a. **Anatomy&embryology ,Histology= 2** credit-hours .
b. **Physiology , Biochemistry = 2** credit-hours .
c. **Public health = 2** credit-hours .

First course
Anatomy
Embryology and development of the airways, lung and diaphragm

First course
Surface anatomy of lung fissures, pleura, heart & vascular structures
Lung and bronchial tree
Pleura
Diaphragm
Detailed anatomy of the Mediastinum (including trachea &oesophagus)
Aorta and Pulmonary vessels and Pericardium
Pulmonary circulation (and the incidence of congenital pathological shunts.)
Nerves of the thorax
Lymphatic drainage of the thorax
Histology
Epithelium of the bronchial tree (bronchial mucosa and alveoli)
Cytology (cell organelles)
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
Infectiveness and transmission of respiratory diseases
Principles of disinfection and isolation
WHO Epidemic and Pandemic Alert and Responses (EPR) and diseases covered by EPR
Financial burden of common respiratory diseases such as COPD including in-patient/out-patient costs and effects on days off work
Effects of smoking on respiratory diseases
Industrial compensation law e.g. asbestos-related diseases

2ed course:The following points have to be covered:

a. **Pathology , Pharmacology , Microbiology= 2** credit-hours .
b. **Internal medicine = 4** credit-hours .

Second course
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

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 pericardtis

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: 18 credit-hours = divided as 3rd& 4th courses

3rdcourse:The following points have to be covered:

Theoretical :
Asthma
COPD
Bronchiectasis and other airway diseases
Sleep related breathing disorders
Respiratory failure& Oxygen Therapy
Cystic fibrosis
Intensive care and high dependency care units
Home care (hospital at home and early discharge schemes)& Pulmonary rehabilitation
Palliative care
Respiratory epidemiology&Evidence-based medicine in respiratory medicine
Skin testing (tuberculin and allergy tests)
Patient oriented approach according to symptoms and signs&Medical ethics and medico legal aspects of the practice of pulmonary medicine
Psychological factors and quality of life in respiratory diseases Public health and health costs
Pulmonary Radiology
Principles of radiation physics, X-ray, CT scan
Plain X-ray chest (normal CXR)
Plain X-ray chest (Abnormalities in CXR)
CT Chest (normal)
CT Chest (abnormalities)
CT Chest (high resolution and multi slice)
Ultrasound
MRI
Ventilation / Perfusion (Radio active isotope) scan
Pulmonary Functions

Theoretical :
Ventilatory functions
Non respiratory functions of the lung
Respiratory muscle function
Acid – base balance
Airway resistance and conductance
Lung compliance (static and dynamic)
Lung diffusion
Pulmonary circulation
Assessment of intra-pleural and airway pressures
O2 and CO2 carriage by blood and their dissociation curves
Chloride shift phenomenon
Hypoxia
Interpretation of spirometery
Interpretation of ABGs
Pulmonary exercise physiology
Sleep and respiratory medicine
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

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 dyspnoea
management / treatment of dyspnoea
Pharmacology of drugs used in dyspnoea
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

4th course :The following points have to be covered:

Theoretical
Respiratory infections (upper and lower respiratory tract infection) &Defense mechanism& immunology of respiratory system
Tuberculosis (pulmonary, extrapulmonary, non-tuberculous (opportunistic) mycobacterial diseases)&Principles of infection control
Thoracic tumours&Principles of nuclear medicine
Pleural diseases
Mediastinal diseases&Developmental disorders
Diseases of chest wall, respiratory muscles and diaphragm
Genetic disorders
Allergic and eosinophilic lung diseases (excluding asthma)& Parasitic Lung diseases
Respiratory manifestations of immunodeficiency disorders
Pulmonary Embolism
Pulmonary Hypertension
Pulmonary oedema
ARDS
Pneumoconiosis& other occupational and environmental diseases

Theoretical
Diffuse parenchymal (interstitial) lung diseases and orphan lung diseases& Hypersensitivity Pneumonitis
Pleuro-pulmonary manifestations of systemic/extrapulmonary disorders& Drug-induced lung diseases
Lung transplantation
Pediatric pulmonary Medicine
Pleural procedures

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 dyspnoea
management / treatment of dyspnoea
Pharmacology of drugs used in dyspnoea
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

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 and Biochemistry	a.10, b.1.6.
	CHEST 7004	Public Health	a.11, a.12, b.1.7., b.1.8.
2ed scemester	CHEST 7003	Pathology, Bacteriology , pharmcology	a.13, a.14 c.1.2.6
	CHEST 7005	Internal Medicine	a.15, b.2.7
3rd&4thscemester	CHEST 7006 & CHEST 7007	Chest Diseases	a.1.-15., b.1., b.2., b.3., c.1., d.1., d.2. & d.3.

program ILOs versus courses matrix				
ILOS				
	A	b	c	d

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1	2	3	1	2	1	2	3
Anatomy and histology	*		*	*	*					*						*							
Public health	*		*	*	*					*			*	*					*			*	*
Pathology&bacteriology	*		*	*	*					*	*	*				*	*	*		*			
pharmacology	*		*	*	*					*	*	*				*	*	*		*			
Physiology and biochemistry	*		*	*	*					*						*	*						
Internal med.	*		*	*	*					*					*	*	*						
Chest diseases	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Academic Reference Standard (ARS)

program ILOs versus courses ARS																							
ILOs	A															b			c		D		
ARS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1	2	3	1	2	1	2	3
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:

a. Fulfill at least 75% of attendance of both 1st& 2ed semesters
b. Passing successfully both 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:

a. Passing successfully the first part exam.
b. Fulfill at least 75% of attendance of both 3ed & 4thsemesters'
c. Passing successfully both 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 5 written papers:
- 3 Hours each in 5 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 cases 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	540 degree
Oral examination	180 degree
Practical/laboratory work	180 degree
Total	900 degree (100%)

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.

المناهج					الامتحانات						
	المقرر الدراسى	الكود	الساعات المعتمدة	النقاط المعتمدة	عدد الاوراق	تحريرى	شفوى	عمليى	اكلينيكى	مجموع الدرجات
الجزء الاول	1. مقرر علمو عملىفسالتشريحوالنموالجينوالهستولوجيا. 2. مقرر علمو عملىفسالفسيولوجياالطبيةوالكمياءالحيوية. 3. مقرر علمو عملىفسالباثولوجياوالفارماكولوجيا والبكتريولوجياوفيمالهعلاقةبالأمراضالصدرية والتدرن. 4. مقرر علمفسالصحةالعامةوالوبائياتفيمايخصال جهازالتنفسوالتدرن, 5. مقرر علمو اكلينيكىفسالأمراضالباطنيةالعامة.	CHEST (7001) CHEST (7002) CHEST (7003) CHEST (7004) CHEST (7005)	2 2 2 2 4	6 6 6 6 12	1 1 1 1	30 30 30 30 60	20 20 20 20		20	**50** **50** **50** **50** **100**
	مقرراتاختيارية.		4	12						
	أنشطةعلمية.		2	4						
الجزء الثانى	مقرراتعلميانواكلينيكيانفسفالأمراضالصدريةو التدرن.	CHEST (7006) CHEST (7007)	7 7	21 21	1 1	180 180	80		80 80	**600**
	مقرراتاختيارية.		2	6						
	أنشطةعلمية.		6	12						
المجموع			**36**	**104**		**540**	**180**		**180**	**900**

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……