Course Syllabus of Cardio-respiratory system

Faculty : Medicine and health sciences
Department: Basic Sciences
Program : Bachelor of Medicine and Surgery

I. General information about the course instructor :

Name	More than 10 teachers	**Office Hours(3 Hours Weekly)**					
Location & phone number		**Sat**	**Sun**	**Mon**	**Tue**	**Wed**	**Thu**
Email							

II. General information about the course

1.	**Course Title**	Cardio-respiratory system					
2.	**Course Code and Number :**	BMD21					
3.	**Credit Hours :**	**Credit Hours**					**Total**
		Theoretical	**Seminar/Tutorial**	**Practical**	**Clinical**	**Training**	
		12	-	2	-	-	14
4.	**Level and Semester:**	3rd year/ 1st semester					
5.	**Pre-requisites :**	Introductory blocks of the first and second year					
6.	**Co-requisites** :	None					
7.	**Program in which the course is offered:**	Bachelor of Medicine and Surgery					
8.	**Teaching Language:**	English					
9.	**Instruction location:**	University of Science and Technology, Sana'a					

III. Course Description

This course (block) aims to provide students with the basic, practical and some clinical knowledge, attitudes and skills concerning respiratory and cardiovascular systems. Students will be exposed to fundamental concepts and practical issues in Anatomy, Embryology, Histology, Physiology, pathology, pharmacology and clinical skills in an integrated approach, they will apply such concepts to understand common disorders in these systems. Also, students will be exposed to important diseases in Medicine and Surgery that are closely linked to these systems. Teaching and learning methods include interactive lectures, small group discussion (Problem-Based Learning "PBL"), practical sessions and demonstrations

IV. Course Aims:

The aims of the course are to :-

1-Provide the students with the basic medical knowledge about the components of the cardio-respiratory systems including anatomy, physiology, histology, pathology, microbiology and pharmacology.

2.-Learn the students the functions of each part of cardio-respiratory system.in health and disease

3- Introduce the biomedical-scientific principles underlying the practice of medicine

4-Acquire the students the clinical skills of taking the history and performing the clinical examination of a patient with a clinical problem in the cardio-respiratory system.

V. Course Intended Learning Outcomes (CILOs) :

1) Describe different aspects of the normal structure, physiology, histology biochemistry, embyrogenesis of the cardiorespiratory system

2) Identify the etiologies and socioeconomic factors affecting the disorders of the cardiorespiratory system and recognize the diagnostic features, complications, and principles of prevention and principles of the treatment of common disorders in cardio respiratory systems

3) Correlate the pathophysiological, biochemical changes with the clinical findings and laboratory results to reach into a provisional diagnosis of the clinical problem.

4) formulate the major lines of a plan for the management of common cardio-respiratory health problems.

5) Perform accurate medical history and clinical examination of a patient with a cardio/respiratory disorder and to request appropriate investigations to reach a diagnosis.

5) Construct an appropriate management plan according to the diagnosis of common cardio-respiratory problems .

6) Perform under supervision in the skill lab some routine diagnostic and therapeutic procedures in the daily practice and emergency rooms related to the cardio-respiratory problems..

7) Work effectively in a team through preparing collective assignments , presenting case studies and in the skill lab activities..

8). Communicate effectively with simulated patients in the skill lab and in the hospital settings by the help of his advisors.

9) Uses his various Information technology skills in accessing different learning resources to take up opportunities for learning new things as well as the ability to learn effectively on their own.

VI. Course Contents				
First: Theoretical Aspects				
No.	**Course Topics/Units**	**Sub-topics**	**No. of lectures**	**Contact Hours**
1	Anatomy	Nose, pharynx &larynx Nerves of thorax and segmental innervations. Pleura & lung Trachea. Thoracic cage. Diaphragm. Thoracic wall (muscles, vessles, nerves). Mediastinum Autonomic supply. Lymph drainage Development & Congenital anomalies Development & congenital anomalies of heart. Heart. Pericardium. Great vessels. Surface, radiological and clinical anatomy.	16	32
2	Physiology	Introduction & general functions of respiratory system Mechanics of pulmonary ventilation Pulmonary volumes & capacities Gas exchange Gas transport Regulation of respiration Hypoxia & cyanosis Introduction to CVS Cardiac muscle: Physiology and properties Cardiac cycle Normal ECG Arterial blood pressure Nervous & humoral regulation of ABP Cardiac output, venous return & its regulation	22	44

3	Pathology	**Upper Respiratory Tract:** • Acute infections. • Nasal tumors. • Nasopharyngeal carcinoma. • Tumors of the larynx. **Lower Respiratory Tract:** • Lung collapse. • Obstructive lung diseases: Asthma, emphysema, chronic bronchitis & bronchiectasis. • Interstitial lung diseases. • Pulmonary infections: Pneumonias, lung abscess & tuberculosis. • Vascular lung diseases & embolism. • Pulmonary neoplasm: Bronchogenic carcinoma, carcinoid & mesothelioma	15	30
		I- Pathology of blood vessels: • Atherosclerosis. • Hypertension. • Aneurysms. • Vasculitis. • Venous & lymphatic disorders. • Vascular tumors. **II- Pathology of the heart:** • Ischemic heart diseases. • Rheumatic heart diseases. • Infective endocarditis. • Myocardial diseases. • Valvular & pericardial heart diseases.		
4	Pharmacology	Cough therapy. Drugs used in bronchial asthma. Respiratory stimulants Antituberculous drugs Antihypertensive agents. Treatment of coronary heart diseases (angina pectoris & MI). Treatment of congestive heart failure Antiarrhythmic agents. Dyslipidemic agents	10	20
5	Microbiology	(Definition, causes, pathogenesis& lab. Diagnosis) **I. Upper respiratory tract:** Microorganisms causing common cold including influenza virus. Allergic rhinitis (Atopy, hay fever) *Self*	9	18

		study. Microorganisms causing Pharyngitis, Tonsillitis, Laryngitis & acute epiglottitis .. Microorganisms causing Otitis media & sinusitis . Microorganisms causing Diphtheria. **II. Lower respiratory tract:** Microorganisms causing Pneumonia. Microorganisms causing Bronchitis & whooping cough. Tuberculosis (Definition, causes, pathogenesis, lab. Diagnosis) Fungal lung infections. SARS. (Definition, causes, pathogenesis, lab. Diagnosis, treatment and prevention) Microorganisms causing Bacterial endocarditis. Microorganisms causing Bactermia, Septicemia and Septic shock		
6	Histology	Histological features of : Nose, nasal sinuses, nasopharynx, Larynx. Trachea, bronchial tree, alveoli & alveolar septae & pleura. Histological features of heart and blood vessles.	2	4
7	Medicine	Chronic obstructive pulmonary diseases general concept and causes Bronchial asthma. Pneumonias Pulmonary tuberculosis Pleural effusion Rheumatic heart diseases Pulmonary hypertension Infective endocarditis Heart failure	6	12
8	Surgery	Chest injuries Hemothorax and pneumothorax Post operative pulmonary complications Common cardiac injuries	4	8
9	Pediatrics	Upper respiratory tract infections and croup Lower respiratory tract infections Bronchial asthma A cyanotic congenital heart diseases Cyanotic congenital heart diseases Rheumatic fever	6	12
Total			**90**	**180** = 12 credit hours

No.	Practical/Tutorial/Clinical topics	No. of labs	Contact Hours
1	Basic clinical skills	**5**	10
2	Anatomy	10	**20**
3	Physiology	5	**10**
4	Pathology	**5**	**10**
5	Histology	**1**	**2**
6	Microbiology	**4**	**8**
Total		**30**	60 = 2 credit hours