Jordan University of Science and Technology

Faculty of Medicine

Doctor Of Medicine (Md) Department

MED353 Respiratory System

First Semester 2023-2024

Course Catalog
6 Credit Hours. This course integrates all basic science disciplines in one system-based course to discuss respiratory system-related topics. Each of the basic science departments is incorporated into an integrated body of knowledge covering anatomy, physiology, pharmacology, pathology, and microbiology. Also, Clinical implications for this information will be addressed by specialists in the clinical departments including internal medicine, surgery, and radiology. The goals of this course will be achieved via lectures, relevant laboratory sessions, seminars or small group discussions, and self-directed learning methods. A hybrid style combining both face-to-face and online teaching methods will be utilized. More specifically, respiratory system (RS)-related topics will be covered at first to provide basic knowledge and understanding of the structure, the function of the respiratory system, the biochemical basis of its function, as well as the pathological basis of respiratory disorders in the lungs and airways. Fundamental principles of basic medical sciences will be applied to pathological situations to distinguish the clinical basis for central respiratory system disorders. During the course and whenever relevant the students are exposed to clinical problems to emphasize the explanations of symptoms, signs, investigations, and forms of treatments. Practical sessions are planned whenever appropriate to be stations around tables to allow students to expose their knowledge for discussion and confirm concepts learned in lectures. Small group discussions of clinical cases are planned at the end of the course where students are divided into small groups and with the help of an instructor they analyze and discuss the problem. Research ideas with specific embedded objectives are also included to emphasize social responsibility, evidence-based medicine, community service, and innovative thinking.

Text Book	
Title	Lectures and LABs
Author(s)	Course Lecturers
Edition	1st Edition
Short Name	1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Anatomy	Clinical Anatomy by Regions	Richard S. Snell	9th Edition	

Anatomy	Grant's Atlas of Anatomy	Anne M. R. Agur and Arthur F. Dalley II	15th Edition	
Histology	Junqueira's Basic Histology	Anthony L. Mescher	16th Edition	
Embryology	Before We Are Born Essentials of Embryology and Birth Defects	Keith Moore, T. V. N. Persaud, Mark Torchia	10th Edition	
Physiology	Guyton and Hall Textbook of Medical physiology	John E. Hall, ?Michael E. Hall	14th Edition	
Physiology	Human Physiology, from Cells to Systems	Lauralee Sherwood	9th Edition	
Biochemistry	Textbook of Biochemistry with Clinical Correlations	Thomas Devlin	7th Edition	
Pathology	Robbins Basic Pathology	Vinay Kumar, Abul K. Abbas, and Jon C. Aster	10th Edition	
Pharmacology	Lippincott?s Illustrated Reviews: Pharmacology	Editors: Karen Whalen, Carinda Feild, Rajan Radhakrishnan, Wolters Kluwer Health	7th Edition	
Pharmacology	Goodman and Gilman?s: The pharmacological basis of therapeutics	Laurence L. Brunton, Bj?rn C. Knollmann	14th Edition	
Microbiology	Sherris Medical Microbiology	Ryan KJ, Ray CG.	6th Edition	
Community Medicine	Community Medicine	Lecture handouts	1st Edition	
Clinical Lectures	Clinical Lectures	Lecture handouts	1st Edition	

Instructor	
Name	**Dr. Wafaa Mahmoud**
Office Location	-
Office Hours	Sun : 11:00 - 13:00 Mon : 09:00 - 10:00 Tue : 09:00 - 12:00 Thu : 10:00 - 11:00
Email	washunnaq@just.edu.jo

Class Schedule & Room

Section 1:
Lecture Time: Mon : 12:30 - 14:30
Room: مدرج د. سعد حجازي

Section 2:
Lecture Time: Mon : 10:30 - 12:30
Room: مدرج د. سعد حجازي

Section 3:
Lecture Time: Wed : 12:30 - 14:30
Room: مدرج د. سعد حجازي

Section 4:
Lecture Time: Wed : 10:30 - 12:30
Room: مدرج د. سعد حجازي

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Introduction to Respiratory System (Multidisciplinary)	
Week 1	Upper Respiratory Tract	From **Anatomy**
Week 1	Pulmonary Ventilation	From **Physiology**, From **Physiology**
Week 1	Pathology of RS (General concepts)	From **Pathology**
Week 1	Lower Respiratory Tract	From **Anatomy**
Week 1	Thoracic cage & Muscles of the thoracic wall	From **Anatomy**
Week 1	Bacterial infections I	From **Microbiology**
Week 1	Alveolar ventilation	From **Physiology**, From **Physiology**
Week 1	Pulmonary infections I (acute, chronic & TB)	From **Pathology**
Week 2	Pleura, lung and mediastinum	From **Anatomy**
Week 2	Physical principles of gas exchange	From **Physiology**, From **Physiology**
Week 2	Pulmonary infections II (acute, chronic & TB)	From **Pathology**
Week 2	Histology of Respiratory Tract	From **Histology**
Week 2	Bacterial infections II	From **Microbiology**
Week 2	Ventilation-perfusion ratio	From **Physiology**, From **Physiology**
Week 2	Obstructive lung disease I	From **Pathology**
Week 2	The role of the RS in maintaining acid-base homeostasis	From **Biochemistry**

Week 2	Bacterial infections III	From **Microbiology**
Week 2	Treatment of respiratory tract infections	From **Clinical Lectures**
Week 2	Anatomy LAB 1	From **Anatomy**
Week 3	Application of hemoglobin-oxygen dissociation curve	From **Physiology**, From **Physiology**
Week 3	Mycobacterium tuberculosis	From **Microbiology**
Week 3	Obstructive lung disease II	From **Pathology**
Week 3	The surgical procedure of RS	From **Clinical Lectures**
Week 3	Fungal infections	From **Microbiology**
Week 3	Regulation of respiration: Neural and chemical control	From **Physiology**, From **Physiology**
Week 3	Restrictive lung disease I	From **Pathology**
Week 3	Occupational lung diseases	From **Community Medicine**
Week 3	Pre- and Post-natal Development of the RS	From **Embryology**
Week 3	Histology LAB	**Lab material** From **Histology**
Week 3	Pathology LAB 1	**Lab material** From **Pathology**
Week 3	Physiology LAB	**Lab material** From **Physiology**, **Lab material** From **Physiology**
Week 3	Microbiology LAB (Diagnostics)	**Lab material** From **Microbiology**
Week 4	Viral infections	From **Microbiology**
Week 4	Anti-histamines & Anti-cough medications	From **Pharmacology**, From **Pharmacology**
Week 4	COVID-19	From **Clinical Lectures**
Week 4	Smoking Cessation	From **Clinical Lectures**
Week 4	Clinical Case 1	From **Clinical Lectures**
Week 4	Restrictive lung disease II	From **Pathology**
Week 4	Lung Tumors I	From **Pathology**
Week 4	Imaging of RS	From **Clinical Lectures**
Week 4	Treatment of Tuberculosis	From **Pharmacology**, From **Pharmacology**
Week 4	Treatment of Asthma and COPD	From **Pharmacology**, From **Pharmacology**
Week 4	Lung Tumors II	From **Pathology**
Week 4	Clinical Case 2	From **Clinical Lectures**

Week 4	Pathology LAB 2	**Lab material** From **Pathology**

Mapping of Course Outcomes to Program Outcomes	**Course Outcome Weight (Out of 100%)**	**Assessment method**
a1. Students will describe the anatomical, histological, developmental, biochemical, and physiological basis of the human respiratory system. [1PLO1]	20%	
a2. Students will explain the symptoms, signs, investigations, forms of treatments, major causes, pathogenesis, morphological changes, complications, and epidemiological aspects associated with anomalies and disease processes affecting the respiratory system.	19%	
a3. Students will identify various bacteria, viruses, parasites, and fungal infections, which infect the respiratory tract and understand the principles of diagnosis, treatment, and prevention.	15%	
b1. Students will apply knowledge from anatomy, physiology, pathology, biochemistry, pharmacology, and microbiology to solve clinical cases related to the respiratory system.	8%	
b2. Students will develop critical thinking skills in diagnosing and managing respiratory conditions through interactive case studies.	10%	
c1. Students will demonstrate the ability to integrate knowledge from various disciplines to provide complete patient care in respiratory medicine.	5%	
c2. Students will demonstrate the ability to communicate their findings professionally in small group practical sessions, both in written and verbal forms, highlighting a thorough understanding of their theoretical knowledge.	15%	
c3. Students will develop advanced proficiency in decision-making for the diagnosis, treatment, and prevention strategies related to respiratory disorders.	8%	

Relationship to Program Student Outcomes (Out of 100%)													
PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12	PLO13	PLO14
20													

Evaluation	
Assessment Tool	**Weight**
Midterm exam	60%
Final exam	40%

Policy	
Attendance Policy:	The students are expected to attend all classes and lab sessions. Repeated tardiness and leaving labs prior to dismissal is a set-up for failure. Absence in excess of 20% is defined as unsatisfactory progress and will be reported to the Dean?s office.