



**Jordan University of Science and Technology**  
**Faculty of Applied Medical Sciences**  
**Respiratory Therapy Department**

RTH345 Pulmonary Radiography Practical - JNQF Level: 7

First Semester 2023-2024

**Course Catalog**

1 Credit Hours. The Pulmonary radiography practical course complements the theoretical knowledge gained in the pulmonary radiography course. This practical course provides students with guided exercises and case studies, students will practice their skills in interpreting chest radiographs, identifying normal anatomy on chest X-rays, and recognizing pathological findings of common respiratory diseases on the chest radiographs.

**Teaching Method:** On Campus

**Text Book**

<b>Title</b>	Radiology Fundamentals: Introduction to Imaging & Technology
<b>Author(s)</b>	William J. Hendrick Jr, Carlton (Tad) Phelps, Harjit Singh, MD.
<b>Edition</b>	5th Edition
<b>Short Name</b>	Ref #1
<b>Other Information</b>	Year,2015. Publisher: Springer

**Instructor**

<b>Name</b>	<b>Dr. Maram Alakhras</b>
<b>Office Location</b>	-
<b>Office Hours</b>	Sun : 12:30 - 14:00 Mon : 11:00 - 12:30 Wed : 11:00 - 12:30 Thu : 09:00 - 10:30
<b>Email</b>	mmalakhras@just.edu.jo

**Class Schedule & Room**

Section 1:  
Lecture Time: Sun : 14:30 - 16:30  
Room: LAB

Section 2:  
Lecture Time: Mon : 10:30 - 12:30  
Room: LAB

Section 3:  
Lecture Time: Mon : 14:30 - 16:30  
Room: LAB

Section 5:  
Lecture Time: Wed : 08:30 - 10:30  
Room: LAB

Section 6:  
Lecture Time: Wed : 12:30 - 14:30  
Room: LAB

Section 7:  
Lecture Time: Thu : 10:30 - 12:30  
Room: LAB

Section 8:  
Lecture Time: Sun : 12:30 - 14:30  
Room: LAB

Section 10:  
Lecture Time: Tue : 10:30 - 12:30  
Room: LAB

### Tentative List of Topics Covered

Weeks	Topic	References
Week 1	Orientation and Laboratory Instruction	
Week 2	Components of the X-ray machine and the principles of image generation and radiation safety	From <b>Ref #1</b>
Week 3	Exploring Chest Anatomy, Radiodensity, and Image Quality	From <b>Ref #1</b>
Week 4	Cross-Sectional Anatomy on Chest CT Scans and Principles of CT Imaging	From <b>Ref #1</b>
Week 5	Practicing Normal Chest X-ray Interpretation Using a Systematic Approach.	From <b>Ref #1</b>
Week 6	Identify the Extrapulmonary Air in Abnormal Chest Radiographs.	From <b>Ref #1</b>

Week 7	Midterm Exam	
Week 8	Lung Volume Changes: Hyperinflation, Atelectasis, and Consolidation in Abnormal Chest Radiographs	From Ref #1
Week 9	Abnormal Radiological Features in Pulmonary Diseases: Connecting Imaging Findings with Patient History and Clinical Symptoms	From Ref #1
Week 10	Case Studies and Radiographic Evaluation	From Ref #1
Week 11	Advanced Pulmonary Radiography: Nuclear Medicine	From Ref #1
Week 12	Radiology Applications in Lung Cancer: Detection, Diagnosis, and Treatment	From Ref #1
Week 13	Final Exam	

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Describe the components and image generation of chest X-rays and computed tomography scans. [100PLO 1] [1L7K1, 1L7S2]	10%	
Practice radiation safety protocols to minimize radiation exposure for both patients and personnel during radiographic procedures. [100PLO 2] [1L7S2, 1L7C4]	10%	
Evaluate the quality of radiographic images, considering technical factors and clinical context. [100PLO 6] [1L7S2, 1L7S3, 1L7C1]	15%	
Apply knowledge of single-plane and cross-sectional anatomy to interpret normal chest x-rays and chest CT scans [50PLO 1, 50PLO 5] [1L7K1, 1L7S1, 1L7C2]	20%	
Develop proficiency in interpretation of the chest X-rays to localize and describe abnormalities related to lung volume, extrapulmonary air, and fluid accumulation. [50PLO 3, 50PLO 5] [1L7S1, 1L7S3, 1L7C1, 1L7C2]	20%	
Analyze patient history, clinical manifestations, and chest X-ray findings to identify correlations and patterns indicative of respiratory diseases. [100PLO 5] [1L7S1, 1L7S3, 1L7C2]	15%	
Summarize and report abnormal radiographic findings, promoting collaboration with radiologists and multidisciplinary teams to optimize patient management. [100PLO 4] [1L7C3]	10%	

Relationship to Program Student Outcomes (Out of 100%)						
PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7
20	10	10	10	35	15	

Relationship to NQF Outcomes (Out of 100%)							
L7K1	L7S1	L7S2	L7S3	L7C1	L7C2	L7C3	L7C4
11.67	16.67	15	15	10	16.67	10	5

Evaluation	
Assessment Tool	Weight
Midterm Exam	40%
Quizzes	10%
Attendance and Participation	10%
Final Exam	40%

Policy	
Academic integrity	All graded clinical forms and documentation must be your own work. Helping other students to cheat in any way or form will not be tolerated. If we become aware of any violations of these rules, we will initiate the actions described in the Policy of Academic Integrity. Each student is responsible for having their daily documentation signed by their preceptors at each department, unit, or station.
Attendance	Regular attendance in the classroom and laboratory sessions is mandatory. When three (2) unexcused absences are accumulated, the student may be issued a written warning. If an additional absence occurs, the student may be dropped from the program following the attendance policies outlined in the general college catalog.

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