



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

RA741 Advanced Pharmacology - JNQF Level: 9

Second Semester 2022-2023

**Course Catalog**

2 Credit Hours. This course delves into the complex pharmacological principles that underpin the use of radiopharmaceuticals and contrast agents in diagnostic imaging and therapeutic applications. Emphasizing a comprehensive understanding of drug mechanisms, pharmacokinetics, and pharmacodynamics, students will explore the selection and administration of various agents used in radiology.

**Teaching Method:** On Campus

**Instructor**

Name	<b>Prof. Haytham Al Ewaidat</b>
Office Location	Vice Dean Office
Office Hours	Sun : 10:30 - 12:30 Mon : 14:30 - 15:30 Tue : 10:30 - 11:30 Wed : 14:30 - 15:30 Thu : 14:30 - 15:30
Email	haewaidat@just.edu.jo

**Class Schedule & Room**

Section 1:  
Lecture Time: Thu : 10:30 - 12:30  
Room: M4202

**Tentative List of Topics Covered**

Weeks	Topic	References
Week 1	Introduction to Pharmacology in Radiology	
Week 2	Radiopharmaceuticals: Basics and Applications	
Week 3	Chemistry of Radiopharmaceuticals	

Week 4	Pharmacokinetics in Radiology	
Week 5	Pharmacodynamics of Imaging Agents	
Week 6	Contrast Agents in Radiology	
Week 7	Safety and Adverse Reactions	
Week 8	Patient Preparation and Management	
Week 9	Regulatory Framework for Pharmacological Agents	
Week 10	Advanced Applications of Radiopharmaceuticals	
Week 11	Novel Contrast Agents and Future Trends	
Week 12	Case Studies in Pharmacology and Imaging	
Week 13	Ethical Considerations in Radiologic Pharmacology	
Week 14	Review of Key Concepts and Case Discussions	
Week 15	Revision and Q&A Session	
Week 16	Final Exam	

<b>Mapping of Course Outcomes to Program Outcomes and NQF Outcomes</b>	<b>Course Outcome Weight (Out of 100%)</b>	<b>Assessment method</b>
Understand Drug Mechanisms and Radiologic Contrast Agents [1PLO M1] [1L9K1]	20%	
Demonstrate safe Administration and Dosage Calculations [1PLO M7] [1L9S3]	20%	
Identify and Manage Adverse Reactions [1PLO M6] [1L9C6]	20%	
Understand how drugs are absorbed, distributed, metabolized, and excreted for tailoring imaging protocols for patients with different medical conditions. [1PLO M3] [1L9S2]	20%	
Explore the regulatory frameworks governing pharmacologic use in radiology, including patient consent, drug approvals, and professional responsibilities in medication management. [1PLO M4] [1L9C4]	20%	

<b>Relationship to Program Student Outcomes (Out of 100%)</b>						
PLO M1	PLO M2	PLO M3	PLO M4	PLO M5	PLO M6	PLO M7
20		20	20		20	20

<b>Relationship to NQF Outcomes (Out of 100%)</b>				
L9K1	L9S2	L9C4	L9S3	L9C6
20	20	20	20	20

<b>Evaluation</b>
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Assessment Tool	Weight
first exam	25%
second exam	25%
final exam	50%

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