



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

RA743 Advanced Principles And Clinical Applications In Computed Tomography

First Semester 2024-2025

**Course Catalog**

3 Credit Hours. In this course students will cover in depth the concepts of physics and components of CT scanners. It briefly reviews the basic physics principles of CT and extensively considers the physics of advanced principles and techniques, and modern CT scanners. The course will review how CT images are created and will extensively cover on how to manipulate different factors to produce images with high quality at the least possible radiation dose to the patients. Different artifacts that may occur will be covered, and how to overcome each one, with softwares, reconstruction algorithms, etc. CT imaging protocols will be presented covering study indications, contraindications, scanning technique, imaging protocol, the appearance of normal CT scans and the appearance of the most common pathologies, and patient management, with real cases, which will be followed by group discussion.

**Teaching Method:** On Campus

**Class Schedule & Room**

Mapping of Course Outcomes to Program Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Demonstrate an advanced understanding of the principles of computed tomography.	20%	
Apply advanced imaging techniques to optimize image quality and patient care	20%	
Evaluate and interpret complex CT images accurately.	15%	
Analyze clinical case studies and apply CT imaging principles to diagnosis and treatment planning	15%	
Demonstrate proficiency in performing advanced CT procedures with attention to patient safety and comfort.	15%	
Collaborate effectively with multidisciplinary healthcare teams in the application of CT imaging modalities	15%	

Relationship to Program Student Outcomes (Out of 100%)												
PLO B1	PLO B2	PLO B3	PLO B4	PLO B5	PLO B6	PLO B7	PLO M1	PLO M2	PLO M3	PLO M4	PLO M5	PLO M6

Evaluation	
Assessment Tool	Weight
Midterm exam	30%
Presentations	20%
Final exam	50%

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