



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

RA211 Physics Of Radiology

First Semester 2023-2024

Course Catalog

3 Credit Hours. Diagnostic radiography is the use of x-rays in the production of an image of part of a patient's body, to diagnose a disease or the extent of damage following trauma. Diagnostic x-ray units may be static or mobile and may be used to produce images on x-ray film or a TV monitor. Other imaging modalities include computerized tomography (CT), radionuclide imaging, magnetic resonance imaging and diagnostic ultrasound. The aim of this course is to give students a basic understanding of how x-rays are produced and their effects and uses so that you can apply this understanding to your clinical practice in either radiotherapy or diagnostic radiography.

Text Book

Title	Christiansen's introduction to the physics of Diagnostic Radiology.
Author(s)	Curry T. S., Dowdy J.E and Murry, R.C.
Edition	4th Edition
Short Name	1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
2	The Essential Physics of Medical Imaging	J.T.Bushberg	3rd Edition	

Instructor

Name	Prof. Khalaf Al-Masaid
Office Location	PH3 L1
Office Hours	
Email	khalaf@just.edu.jo

Class Schedule & Room

Section 1:

Lecture Time: Sun, Tue : 11:30 - 12:30

Room: M4202

Teaching Assistant

Rasha Elshayib(Section 1)

Prerequisites

Line Number	Course Name	Prerequisite Type
821035	HSS103PHY General Physics	Prerequisite / Study
921031	PHY103 General Physics	Prerequisite / Study
141020	RA102 Introduction To Radiologic Technology	Prerequisite / Study

Tentative List of Topics Covered

Weeks	Topic	References
Week 1	Introduction	From 1, From 2
Week 2	Course description and introduction (Energy, Heat)	From 1, From 2
Week 3	Atomic structure, current electricity	From 1, From 2
Week 4	Electricity and electromagnetism	From 1, From 2
Week 5	The x-ray tube , production of x-rays	From 1, From 2
Week 6	Conductors and Semiconductors, transformers	From 1, From 2
Week 7	Interaction of x-rays with matter	From 1, From 2
Week 8	Process of image production	From 1, From 2
Week 9	Process of image production 2	From 1, From 2
Week 10	Diagnostic x-ray tubes	From 1, From 2
Week 11	Diagnostic x-ray tubes 2	From 1, From 2

Week 12	Basic principles of magnetic resonance imaging	From 1, From 2
Week 13	Basic principles of magnetic resonance imaging	From 1, From 2
Week 14	Basic principles of nuclear medicine	From 1, From 2
Week 15	Basic principles of ultrasound	From 1, From 2
Week 16	Revision	From 1, From 2

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

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