



**Jordan University of Science and Technology**  
**Faculty of Engineering**  
**Nuclear Engineering Department**

NE322 Radiation Protection & Dosimetry

Second Semester 2018-2019

**Course Catalog**

3 Credit Hours. Principles of radiation protection, biological effects of radiation, radiation risk assessment, external and internal dosimetry.

**Text Book**

<b>Title</b>	Atoms, Radiation, and Radiation Protection
<b>Author(s)</b>	James E. Turner
<b>Edition</b>	2nd Edition
<b>Short Name</b>	Ref#1
<b>Other Information</b>	

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
Ref#2	Introduction to Radiological physics and Radiation Dosimetry	Frank Herbert Attix	6th Edition	

**Instructor**

Name	<b>Dr. Abdullah Alali</b>
Office Location	-
Office Hours	Sun : 08:30 - 09:30 Tue : 08:30 - 09:30 Tue : 12:30 - 13:30 Wed : 08:00 - 09:00 Thu : 08:30 - 09:30 Thu : 12:30 - 13:30
Email	aealali@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sun, Tue, Thu : 09:30 - 10:30 Room: E2113

Prerequisites		
Line Number	Course Name	Prerequisite Type
2003110	NE311 Ionizing Radiation & Measurement	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Weeks 1, 2, 3, 4	Radiation Dosimetry.	<b>Chapter12</b> From <b>Ref#1</b>
Weeks 5, 6, 7, 8	Chemical and Biological Effects of Radiation.	<b>Chapter13</b> From <b>Ref#1</b>
Weeks 9, 10	Radiation-Protection Criteria and Exposure Limits.	<b>Chapter14</b> From <b>Ref#1</b>
Weeks 11, 12, 13	External Radiation Protection.	<b>Chapter15</b> From <b>Ref#1</b>
Weeks 14, 15	Internal Dosimetry and Radiation Protection.	<b>Chapter16</b> From <b>Ref#1</b>

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Identify the basic quantities and units used in radiation dosimetry. [11, 17]	20%	First Exam, quizzes, Final Exam
Calculate the absorbed dose from different types of ionizing radiation. [11, 24]	15%	First Exam, quizzes, Final Exam
Describe the chemical and biological effects of radiation on human tissue. [11]	10%	Second Exam
Identify the dose-response relationship and the factors affecting it. [11]	10%	Second Exam, quizzes
Conduct risk estimation for the purpose of radiation protection. [11, 24]	15%	Second Exam, Final Exam
Design an appropriate shielding for the most common kinds of external radiation. [11, 32]	20%	quizzes, Final Exam
Assess the effective and equivalent dose from internal emitters [11]	10%	Final Exam

Relationship to Program Student Outcomes (Out of 100%)						
1	2	3	4	5	6	7
55	15		20			10

<b>Evaluation</b>	
<b>Assessment Tool</b>	<b>Weight</b>
First Exam	25%
Second Exam	25%
quizes	10%
Final Exam	40%

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