



İZMİR UNIVERSITY OF ECONOMICS

**Vocational School Of Health Services  
Medical Imaging Techniques**

**TGT 104 - Radiation Safety and Protection From Radiation**

**COURSE INTRODUCTION AND APPLICATION INFORMATION**

<b>Course Name</b>	<b>Radiation Safety and Protection From Radiation</b>
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<b>Code</b>	<b>Semester</b>	<b>Theory (hour/week)</b>	<b>Application/Laboratory (hour/week)</b>	<b>Local Credits</b>	<b>ECTS</b>
TGT 104	Spring	3	0	3	5

<b>Prerequisites</b>	None
<b>Course Language</b>	Turkish
<b>Course Type</b>	Required
<b>Course Level</b>	Short Cycle
<b>Mode of Delivery</b>	-
<b>Teaching Methods and Techniques</b>	-
<b>Course Coordinator</b>	* Öğr. Gör. Uğur GÜRGAN
<b>Course Lecturer(s)</b>	* Öğr. Gör. Uğur GÜRGAN
<b>Course Assistants</b>	-

<b>Course Objectives</b>	
<b>Course Learning Outcomes</b>	The students who succeeded in this course; * Define the harm of radiation on human health and environment * Explain the types of dosimetry * Define how to behave during a radiation accident. * Explain how radiation interaction with matter. * Define the radiation dose units
<b>Course Description</b>	Harm of radiation on human health and environment and protection ways.

<b>Course Category</b>	Core Courses	X
	Major Area Courses	
	Supportive Courses	
	Media and Managment Skills Courses	
	Transferable Skill Courses	

## WEEKLY SUBJECTS AND RELATED PREPARATION STUDIES

Week16	Subjects	Related Materials
1	Sources and types of radiation	Radyasyon ve Radyasyondan Korunma Fiziği, Palme yayınevi, 2013. Syf: 255-303
2	Radiation interaction with matter, Radioactivity	Radyasyon ve Radyasyondan Korunma Fiziği, Palme yayınevi, 2013. Syf: 305-361
3	Radiation dose and units	Radyasyon güvenliği ve radyasyondan Korunma Mustafa Demir s:34-38
4	Biological effects of radiation	Radyasyon güvenliği ve radyasyondan Korunma Mustafa Demir s:41-52
5	Detectors and Dosimetry	Radyasyon ve Radyasyondan Korunma Fiziği, Palme yayınevi, 2013. Syf: 557-589
6	Midterm exam	
7	Tools required for protection from radiation	Radyasyon güvenliği ve radyasyondan Korunma Mustafa Demir s:73-76
8	Methods for protection from radiation in radiology, personal safety precautions for radiation workers, radiation detection and measurement, personal dose monitoring	Radyasyon ve Radyasyondan Korunma Fiziği, Palme yayınevi, 2013. Syf: 367-424
9	The properties of the design of the Radiology departments, the design specifications of the rooms with ionizing radiation	Radyasyon güvenliği ve radyasyondan Korunma Mustafa Demir s: 53-60, 76-80

10	The protection of the patient, the patient's relatives and the environment from radiation	Radyasyon güvenliđi ve radyasyondan Korunma Mustafa Demir s:81-96
11	Midterm exam	
12	The use of radiation and protection from radiation in pregnant women	Radyasyon güvenliđi ve radyasyondan Korunma Mustafa Demir s:84-85
13	International organizations and authorities related to radiation protection and the applications	Radyasyon güvenliđi ve radyasyondan Korunma Mustafa Demir s:135-136
14	TAEA Radiation safety legislation (regulations) and other legal regulations	Radyasyon güvenliđi ve radyasyondan Korunma Mustafa Demir s:136-149
15	General discussion	
16	Final exam	

## SOURCES

<b>Course Notes / Textbooks</b>	1-Mustafa Demir, Radyasyon Güvenliđi ve Radyasyondan Korunma, İstanbul, 2013 2- Course slides
<b>Suggested Readings/Materials</b>	1-□Ahmet Kumaş, Radyasyon Sađlıđı ve Güvenliđi, Palme Yayınları, 2000 2-Türkiye Atom Enerjisi Kurumu Radyasyon Kazalarında Önlemler 3-Ahmet Kumaş, Radyasyon Fiziđi ve Tıbbi Uygulamaları, Palme Yayınları, 2000 4-Güneş Tanır, Radyasyon ve Radyasyondan Korunma Fiziđi, Palme Yayınevi, 2013

## EVALUATION SYSTEM

Semester Activities	Number	Percentage of Grade
Participation	1	5
Laboratory / Application	-	-
Field Work	-	-
Quiz/Studio Critic	1	5
Portfoilo	-	-
Homework Assignment	1	25
Presentation/Jury	-	-
Project	-	-
Seminar/Workshop	-	-
Oral Exam	-	-
Midterm	1	25
Final	1	40
<b>Total</b>	<b>5</b>	<b>100</b>

<b>WEIGHTING OF SEMESTER ACTIVITIES ON THE FINAL GRADE</b>	<b>4</b>	<b>60</b>
<b>WEIGHTING OF END-OF-SEMESTER ACTIVITIES ON THE FINAL GRADE</b>	<b>1</b>	<b>40</b>
<b>Total</b>	<b>5</b>	<b>100</b>

## ECTS / WORKLOAD TABLE

Semester Activities	Number	Duration (Hours)	Total Workload
Course Hours (Including Exam Week: 16 x Total Hours)	16	3	48
Laboratory / Application Hours	16	-	-
Study Hours Out of Class	15	2	30
Field Work	-	-	-
Quiz / Studio Critique	1	5	5
Portfolio	-	-	-
Homework / Assignment	1	35	35
Presentation / Jury	-	-	-
Project	-	-	-
Seminar / Workshop	-	-	-
Oral Exam	-	-	-
Midterm	1	10	10
Final	1	12	12
		<b>Total Workload</b>	<b>140</b>

## THE RELATIONSHIP BETWEEN COURSE LEARNING OUTCOMES AND PROGRAM QUALIFICATIONS

#	Program Qualifications / Outcomes	* Level of Contribution				
		1	2	3	4	5
1	To have the required contemporary theoretical and practical knowledge in his/her field					X
2	To use the material and technology related to his/her field, and make their maintenance, use the information and communication technologies at basic level				X	
3	To have the competency to recognize the problems in his/her field, analyze them, develop evidence-based solutions and have the ability to share their suggestions with others				X	
4	To be aware of legal responsibilities, conduct basic studies in her/his field independently	X				
5	To communicate with patients, relatives and colleagues properly, comprehensively, honestly and explicitly, transfer his/her thoughts and knowledge through written and oral communication		X			
6	To take responsibility as an active team member during the practices in his/her field		X			
7	To commentate and evaluate the scientific information with a critical approach by the help of knowledge gained in his/her field		X			
8	To comprehend the importance of lifelong learning, to determine and meet her/his learning needs, to develop herself/himself by monitoring the development in science and technology		X			
9	To act by considering the universal ethical values, social and cultural characteristics			X		
10	To know the concepts of occupational safety, patient safety, environmental protection and quality, and fulfill the requirements					X
11	To be able to follow information in his field and communicate with colleagues in English at least a level of European Language Portfolio A2 General Level	X				
12	To take appropriate measures in accordance with radiation safety and radiation protection rules					X
13	To determine the needs according to the requirements and carry out activities for development in the field of medical imaging techniques					

\*1 Lowest, 2 Low, 3 Average, 4 High, 5 Highest