

TOROS ÜNİVERSİTESİ

Vocational School
Medical Imaging Techniques

Course Information

NUCLEAR MEDICINE					
Code	Semester	Theoretical	Practice	National Credit	ECTS Credit
		Hour / Week			
TGT209	Fall	2	0	2	2

Prerequisites and co-requisites	
Language of instruction	Turkish
Type	Elective
Level of Course	Associate
Lecturer	Lec. Doctor Fatma Sevin COŞAR AYAZ
Mode of Delivery	Face to Face
Suggested Subject	
Professional practise (internship)	None
Objectives of the Course	Purpose: To educate the students as technical personnel who have knowledge about the preparation and application of radionuclide and radiopharmaceuticals used in diagnosis and treatment of diseases in the field of Nuclear Medicine,, who can communicate with the patients, who know the working principles and quality control of the imaging tools, and who are able to use these devices.
Contents of the Course	Content: Nuclear Medicine science, physics of nuclear medicine, preparation and application of radioactive materials used in the diagnosis and treatment of the diseases, imaging methods and application techniques, working principles and quality control of the devices, radiation effects and radiation protection will be explained. The students will also be informed about the characteristics of the patients in the Nuclear Medicine department and how to approach the patients who have been administered the radioactive substance.

Learning Outcomes of Course

#	Learning Outcomes
1	1- Knows how to prepare and use the radionuclides and radiopharmaceuticals which are utilized in the diagnosis and treatment of diseases.
2	2- Knows the working principles and quality control of the imaging devices, and can use them.
3	3- Knows patient preparation, imaging techniques (protocols) and positioning the patient before imaging.
4	4- Knows the radiation protection measures.
5	5- Can inform the patient about radiation safety and can communicate well with the patient.

Course Syllabus

#	Subjects	Teaching Methods and Technics
1	1st week: Introduction to Nuclear Medicine - Basic concepts and physics of Nuclear Medicine: Radiation, atom, radiopharmaceutical, types of radiation in Nuclear Medicine, relevant fields of Nuclear Medicine Science, the place of Nuclear Medicine in the diagnosis and treatment of the diseases.	
2	2nd week: Devices used in Nuclear Medicine, their working principles and quality control-1: Gamma Camera (SPECT), PET/CT, field monitors, dose calibrators, dosimeters, thyroid uptake device, gamma probe.	
3	3rd week: Devices used in Nuclear Medicine, their working principles and quality control-2: Gamma Camera (SPECT), PET/CT, field monitors, dose calibrators, dosimeters, thyroid uptake device, gamma probe.	

4	4th week: Radionuclides and radiopharmaceuticals used in Nuclear Medicine, their preparation and quality control.	
5	5th week: Nuclear Medicine methods used in the urinary system diseases, the radiopharmaceuticals used, patient preparation, imaging techniques and clinical indications.	
6	6th week: Nuclear Medicine methods used in the respiratory and circulatory system diseases, the radiopharmaceuticals used, patient preparation, imaging techniques and clinical indications.	
7	7th week: Nuclear Medicine methods used in the skeletal system diseases, the radiopharmaceuticals used, patient preparation, imaging techniques and clinical indications.	
8	8th week: Midterm exams.	
9	9th week: Nuclear Medicine methods used in the endocrine system diseases, the radiopharmaceuticals used, patient preparation, imaging techniques and clinical indications.	
10	10th week: Nuclear Medicine methods used in oncology, the radiopharmaceuticals used, patient preparation, imaging techniques and clinical indications.	
11	11th week: Nuclear Medicine methods used in the gastrointestinal system diseases, the radiopharmaceuticals used, patient preparation, imaging techniques and clinical indications.	
12	12th week: Nuclear Medicine methods used in the central nervous system diseases, the radiopharmaceuticals used, patient preparation, imaging techniques and clinical indications- Nuclear Medicine methods used in the infectious diseases, the radiopharmaceuticals used, patient preparation, imaging techniques and clinical indications.	
13	13th week: Radionuclide treatment methods used in Nuclear Medicine.	
14	14th week: Radiation protection and radiation safety in Nuclear Medicine, informing the patient about radiation safety and communication with the patient.	
15		
16	Final Exam	

Course Syllabus

#	Material / Resources	Information About Resources	Reference / Recommended Resources
1	References: Nuclear Medicine course book.		

Method of Assessment

#	Weight	Work Type	Work Title
1	40%	Mid-Term Exam	Mid-Term Exam
2	60%	Final Exam	Final Exam

Relationship between Learning Outcomes of Course and Program Outcomes

#	Learning Outcomes	Program Outcomes	Method of Assessment
1	1- Knows how to prepare and use the radionuclides and radiopharmaceuticals which are utilized in the diagnosis and treatment of diseases.	4	1,2
2	2- Knows the working principles and quality control of the imaging devices, and can use them.	4	1,2
3	3- Knows patient preparation, imaging techniques (protocols) and positioning the patient before imaging.	10	1,2
4	4- Knows the radiation protection measures.	2	1,2
5	5- Can inform the patient about radiation safety and can communicate well with the patient.	4	1,2

PS. The numbers, which are shown in the column Method of Assessment, presents the methods shown in the previous table, titled as Method of Assessment.

Work Load Details

#	Type of Work	Quantity	Time (Hour)	Work Load
1	Course Duration	14	2	28

2	Course Duration Except Class (Preliminary Study, Enhancement)	14	2	28
3	Presentation and Seminar Preparation	0	0	0
4	Web Research, Library and Archival Work	0	0	0
5	Document/Information Listing	0	0	0
6	Workshop	0	0	0
7	Preparation for Midterm Exam	1	1	1
8	Midterm Exam	1	1	1
9	Quiz	0	0	0
10	Homework	0	0	0
11	Midterm Project	0	0	0
12	Midterm Exercise	0	0	0
13	Final Project	0	0	0
14	Final Exercise	0	0	0
15	Preparation for Final Exam	1	1	1
16	Final Exam	1	1	1
				60