

**Vocational School of Health Services / Radiotherapy**  
**2024 - 2025 Academic Year**  
**MEDICAL IMAGING DEVICES**  
**Syllabus**

<b>Course Description</b>					
<b>Name</b>	<b>Code</b>	<b>Semester</b>	<b>T+A Hour</b>	<b>Credit</b>	<b>ECTS</b>
MEDICAL IMAGING DEVICES	RAD1115028	Fall Semester	2+0	2	4
<b>Prerequisites Courses</b>					
<b>Recommended Elective Courses</b>	MEDICAL INFORMATION TECHNOLOGIES				
<b>Language of Instruction</b>	Turkish				
<b>Course Level</b>	Short Cycle (Associate's Degree)				
<b>Course Type</b>	Elective				
<b>Course Coordinator</b>	Lect. Mehmet Siddik CEBE				
<b>Name of Lecturer(s)</b>	Assist.Prof. Mustafa ÇAĞLAR				
<b>Assistant(s)</b>					
<b>Aim</b>	To give basic theoretical terminology of medical imaging methods and principles of physics and to give the necessary theoretical information about device equipments.				
<b>Course Content</b>	This course contains; The structure of atom and its properties,X-ray production,Properties of x-rays,Basics of Imaging,Radiography Device and Radiographic Imaging,Fluoroscopy Device and Fluoroscopic Imaging,Computed Tomography Device,Tomographic Imaging,Tomographic Imaging II,Mammography,Ultrasound imaging,Ultrasound imaging II,Magnetic Resonance Imaging,Magnetic Resonance Imaging II.				
<b>Course Learning Outcomes</b>			<b>Teaching Methods</b>	<b>Assessment Methods</b>	
Describes the basic principles and technical features of medical imaging systems			10, 12, 16, 9	A, G	
Describes the physical principles used in creating medical images			10, 12, 16, 9	A, G	
Recognizes the display method of a visualized image			10, 12, 16, 9	A, G	
Can compare the advantages and disadvantages of different imaging technologies			10, 12, 16, 9	A, G	
Analyzes basic image processing methods and the need for them			10, 12, 16, 9	A, G	
<b>Teaching Methods</b>	10: Discussion Method, 12: Problem Solving Method, 16: Question - Answer Technique, 9: Lecture Method				
<b>Assessment Methods</b>	A: Traditional Written Exam, G: Quiz				
<b>Lecture Schedule</b>					
<b>Sequence</b>	<b>Topics</b>	<b>Preliminary Preparation</b>			
1	The structure of atom and its properties	Mebis Notes			
2	X-ray production	Mebis Notes			
3	Properties of x-rays	Mebis Notes			
4	Basics of Imaging	Mebis Notes			
5	Radiography Device and Radiographic Imaging	Mebis Notes			
6	Fluoroscopy Device and Fluoroscopic Imaging	Mebis Notes			
7	Computed Tomography Device	Mebis Notes			
8	Tomographic Imaging	Mebis Notes			
9	Tomographic Imaging II	Mebis Notes			
10	Mammography	Mebis Notes			
11	Ultrasound imaging	Mebis Notes			
12	Ultrasound imaging II	Mebis Notes			
13	Magnetic Resonance Imaging	Mebis Notes			
14	Magnetic Resonance Imaging II	Mebis Notes			
<b>Evaluation Methods</b>		<b>Weight(%)</b>			
Midterm Exam		40			
General Exam		60			

<b>Resources</b>
Lecture Notes, Temel Radyoloji Tekniği - Tamer Kaya, Baki Adapınar, Ragıp ÖzkanBasic Medical Radiological Imaging Technique/ hyperlinks