

**Vocational School of Health Services / Radiotherapy**

**2024 - 2025 Academic Year**

**SIMULATION in RADIOTHERAPY**

**Syllabus**

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
SIMULATION in RADIOTHERAPY	RAD2113774	Fall Semester	2+4	4	10
<b>Prerequisites Courses</b>					
<b>Recommended Elective Courses</b>					
<b>Language of Instruction</b>	Turkish				
<b>Course Level</b>	Short Cycle (Associate's Degree)				
<b>Course Type</b>	Required				
<b>Course Coordinator</b>	Assist.Prof. Mustafa ÇAĞLAR				
<b>Name of Lecturer(s)</b>	Assist.Prof. Mustafa ÇAĞLAR				
<b>Assistant(s)</b>					
<b>Aim</b>	To give informations about imaging devices and immobilisation devices used for radiotherapy				
<b>Course Content</b>	This course contains; Importance of imaging in radiotherapy,Preparation before imaging in radiotherapy; whats immobilisation? Why is immobilisation done?,Overview of immobilisation devices,Important parameters during immobilisation,Working principle of conventional simulators,Working principle of BT simülatör,Application differences between conventional and BT simulators,Using contrast in BT simülatör and its importance,4D scan in BT simülatör and its importance,BT simulation and immobilisation devices used for brain, head and neck irradiations,BT simulation and immobilisation devices used for thorax irradiations,BT simulation and immobilisation devices used for abdomen region irradiations,BT simulation and immobilisation devices used for pelvis region irradiations,BT simulation and immobilisation devices used for specific treatment.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
1.	Learns about imaging devices and immobilisation devices used for radiotherapy		10, 16, 9	A	
1.1.	Knows about imaging devices		10, 9	A	
1.2.	Knows about immobilisation devices		10, 12, 16, 9	A	
2.	Discuss difference between conventional and BT simulators		10, 16, 9	A	
2.1.	Knows about conventional simülatör		10, 16, 9	A	
2.2.	Knows about BT simülatör		10, 16, 9	A	
3.	Observes simulation methods and immobilisation devices used for different anatomic region irradiations.		10, 16, 9	A	
3.1.	Implements BT simulation and immobilisation devices for Brain , head and neck irradiation.		16, 9	A	
3.2.	Implements BT simulation and immobilisation devices for thorax irradiation.		6, 9	A	
3.3.	Implements BT simulation and immobilisation devices for abdomen head and neck irradiation		16, 9	A	
3.4.	Implements BT simulation and immobilisation devices for spesific treatment.		16, 9	A	
1.3.	Carries out applications with these devices		10, 16, 9	A	
<b>Teaching Methods</b>	10: Discussion Method, 12: Problem Solving Method, 16: Question - Answer Technique, 6: Experiential Learning, 9: Lecture Method				
<b>Assessment Methods</b>	A: Traditional Written Exam				
Lecture Schedule					
Sequenc e	Topics	Preliminary Preparation			
1	Importance of imaging in radiotherapy	Mebis Lectures			
2	Preparation before imaging in radiotherapy; whats immobilisation? Why is immobilisation done?	Mebis Lectures			
3	Overview of immobilisation devices	Mebis Lectures			
4	Important parameters during immobilisation	Mebis Lectures			
5	Working principle of conventional simulators	Mebis Lectures			
6	Working principle of BT simülatör	Mebis Lectures			
7	Application differences between conventional and BT simulators	Mebis Lectures			
8	Using contrast in BT simülatör and its importance	Mebis Lectures			
9	4D scan in BT simülatör and its importance	Mebis Lectures			
10	BT simulation and immobilisation devices used for brain, head and neck irradiations	Mebis Lectures			
11	BT simulation and immobilisation devices used for thorax irradiations	Mebis Lectures			
12	BT simulation and immobilisation devices used for abdomen region irradiations	Mebis Lectures			
13	BT simulation and immobilisation devices used for pelvis region irradiations	Mebis Lectures			
14	BT simulation and immobilisation devices used for specific treatment	Mebis Lectures			
Evaluation Methods		Weight(%)			
Midterm Exam		40			
General Exam		60			

Resources
Basic Radiation Oncology  Murat Beyzadeoglu, Gokhan Ozyigit, Cüneyt Ebruli ISBN-10: 13662519143 ISBN-13: 978-3662519141Introduction to Radiological Physics and Radiation Dosimetry,The Physics of Radiation Therapy 4 Faiz M. Khan