

Vocational School of Health Services / Medical Imaging Techniques

2024 - 2025 Academic Year

RADIATION SAFETY & RADIATION PROTECTION

Syllabus

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
RADIATION SAFETY & RADIATION PROTECTION	TGT1213773	Spring Semester	2+0	2	6
Prerequisites Courses					
Recommended Elective Courses					
Language of Instruction	Turkish				
Course Level	Short Cycle (Associate's Degree)				
Course Type	Required				
Course Coordinator	Assist.Prof. Mustafa ÇAĞLAR				
Name of Lecturer(s)	Assist.Prof. Mustafa ÇAĞLAR				
Assistant(s)					
Aim	To ensure you gain detailed information and competency for safely managing radioactive sources, devices and materials in the workplace.				
Course Content	This course contains; Definition of Radiation and Its Types, Radioactivity, Radiation Units and Radiation Measurement Methods, Basic Principles in Radiation Protection, Biological Effects of Radiation, Radiation Protection Systems, Dose Constraints, Pregnancy and Radiation Protection, Duties and Responsibilities of Radiation Protection Committee in Hospitals, Radiation Protection in Radiotherapy and Radiology, Whole Body and Organ Dose Constraints, Legal Regulations About Radioactive Wastes, Legal Obligations about Radiation Accidents, Emergency Procedures.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
Provides information about the historical development of radiation.			10, 16, 9	A	
Explains the biological effects of radiation.			10, 16, 9	A	
Explains the detectors used in radiation measurement.			10, 16, 9	A	
Explains the physical units related to radiation.			10, 12, 16, 9	A	
Makes radiation risk calculations.			10, 12, 16, 9	A	
It provides radioactive waste management in hospitals.			10, 16, 9	A	
Explains the principles of radiation shielding			10, 16, 9	A	
Teaching Methods	10: Discussion Method, 12: Problem Solving Method, 16: Question - Answer Technique, 9: Lecture Method				
Assessment Methods	A: Traditional Written Exam				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	Definition of Radiation and Its Types	Mebis Lectures			
2	Radioactivity	Mebis Lectures			
3	Radiation Units and Radiation Measurement Methods	Mebis Lectures			
4	Basic Principles in Radiation Protection	Mebis Lectures			
5	Biological Effects of Radiation	Mebis Lectures			
6	Radiation Protection Systems	Mebis Lectures			
7	Dose Constraints	Mebis Lectures			
8	Pregnancy and Radiation Protection	Mebis Lectures			
9	Duties and Responsibilities of Radiation Protection Committee in Hospitals	Mebis Lectures			
10	Radiation Protection in Radiotherapy and Radiology	Mebis Lectures			
11	Whole Body and Organ Dose Constraints	Mebis Lectures			
12	Legal Regulations About Radioactive Wastes	Mebis Lectures			
13	Legal Obligations about Radiation Accidents	Mebis Lectures			
14	Emergency Procedures	Mebis Lectures			
Evaluation Methods		Weight(%)			
Midterm Exam		40			
General Exam		60			

Resources
Radiation Oncology Physics: A Handbook for Teachers and Students
Technical Editor: E.B Podgorsak
INTERNATIONAL ATOMIC ENERGY AGENCY VIENNA, 2005
Chapter 16 Mebis Lecture Notes