



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Radiation Security and Radiation Protection							
Course Code		TIP161		Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	3	Workload	76 (Hours)	Theory	2	Practice	0	Laboratory	0
Objectives of the Course		The aim of this course is to teach the biological effects of radiation, basic principles of radiation protection to gain knowledge, skills and responsibility.							
Course Content		Definition of radiation, radiation dose and units, effects on human body, ionizing radiation, molecular and cellular radiobiology, early effects of radiation, late effects of radiation, epidemiological studies, the basic principles of radiation protection, the employee itself radiation protection, radiation from hospital staff, radiation protection from patient and patient relatives protection, radiation protection of the environment, design properties of radiology departments, ionizing design properties of the rooms used in radiation, TAEK radiation safety legislation, radiation structure of safety committees, other legal regulations related to radiation safety, emergency plans implementation of emergency plans							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Individual Study					
Name of Lecturer(s)									

### Prerequisites & Co-requisites

Equivalent Course	TG205
-------------------	-------

### Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	70

### Recommended or Required Reading

1	Radiation and Radiation Protection Physics, James E. Martin, palm yayıncılık. 2. baskı
2	The Physics of Radiology, Horold Elfort Johns, 4. edition, Charles C Thomas, publisher, USA
3	The Physics of Radiation Therapy, Faiz M Khan, Third Edition, Linpincott Williams & Wilkins
4	Principles and Practice of Radiation Oncology, Fifth Edition, Edward C Halperin, Carlos A Perez, Luther W Brady, Linpincott Williams & Wilkins

Week	Weekly Detailed Course Contents	
1	Theoretical	Definition and Properties of Radiation
2	Theoretical	Definition and Properties of Radiation Radiation Dose and Units
3	Theoretical	Effects of Ionizing Radiation on Human Body
4	Theoretical	Molecular And Cellular Radiobiology
5	Theoretical	Early Effects of Radiation
6	Theoretical	Late Effects of Radiation
7	Theoretical	Epidemiological Studies
8	Intermediate Exam	intermediate
9	Theoretical	Basic Principles of Radiation Protection
10	Theoretical	Basic Principles of Radiation Protection
11	Theoretical	Employee Protecting Himself From Radiation, Protecting Patient and Patient Relation from Radiation, Radiation Protection of Hospital Staff, Radiation Protection
12	Theoretical	TAEK Radiation Safety Legislation, Radiation Safety Committees Structure
13	Theoretical	Other Regulatory Legislation on Radiation Safety
14	Theoretical	Making Emergency Plans and Implementation

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	2	70



Midterm Examination	1	2	1	3
Final Examination	1	2	1	3
Total Workload (Hours)				76
[Total Workload (Hours) / 25*] = ECTS				3
*25 hour workload is accepted as 1 ECTS				

### Learning Outcomes

1	Definition of radiation
2	Basic definitions about radiation and biological effects
3	Radiotherapy takes the necessary precautions in accordance with the radiation safety and radiation protection rules.
4	Understands the biological effect of radiation on live
5	Understands the legislation about radiation protection

### Programme Outcomes (Medical Imaging Techniques)

1	THE ANATOMICAL STRUCTURE
2	HUMAN PHYSIOLOGY
3	APPLY FIRST AID FOR PATIENTS OR INJURIES
4	MAKING RADIOGRAPHY AND FILM BATHROOM, PRINTING PROCESSES
5	MAKING FLOROSCOPIC IMAGING
6	MAKING THE MAMOGRAPHY TEST
7	DOING ANGIOGRAPHY
8	MAKING MAGNETIC RESONANCE IMAGING (MRI)
9	MAKING COMPUTERIZED TOMOGRAPHY (CT) ANALYSIS
10	DOING THE BONE MINERAL DANCEITOMETER (DEXA)
11	ULTRASONOGRAPHY (USG)
12	GAMA CAMERA IMAGING
13	RADIOTHERAPY SIMULATION AND APPLICATION
14	RADIATION SAFETY AND RADIATION PROTECTION
15	MAKING BUSINESS ORGANIZATION AND PROVIDING PROFESSIONAL DEVELOPMENT
16	KEEPING RADIOLOGICAL ANATOMY
17	KEEPING MEDICAL TERMS
18	To be able to use modern Turkish language knowledge and language skills.
19	To have knowledge about Atatürk's Principles and Revolution History
20	To communicate at a basic level in a foreign language
21	Knows cancer and its types. Know what needs to be done to prevent cancer
22	To increase student's awareness of gender equality
23	To have information about clinical biochemistry
24	Knows the structure of proteins, carbohydrates and fats
25	To know family planning methods
26	To obey occupational ethic principals
27	To know occupational ethics
28	Understand the importance of teamwork
29	The organizational chart of the institution will be able to understand.
30	Will understand the importance of record keeping.
31	To know the ethical dilemmas in health
32	TTTo gain educational and exploratory knowledge about control and protection against infectious diseases
33	To evaluate the general condition of the patient or the injured to take the initiative
34	To know the indications and contraindications of contrast agents
35	To be able to use and maintain the right communication skills with patients and relatives
36	To be able to communicate with colleagues, patient and patient relatives at therapeutic level
37	To evaluate the behavior of patients and their relatives
39	To have general information about health system
40	To learn the rights and obligations of health workers
41	Ability to gain theoretical knowledge about disaster recovery



42	To gain practical knowledge about disaster recovery and to be able to use them in accordance with ethical principles
43	To be able to explain the concepts related to substance abuse
44	Identify the needs of individuals with substance addiction
45	Working organization
46	Prepare promotional material with ready template
47	To be able to prepare personal web site
48	Knows pharmacological agents. know how to apply the drugs according to the indications and contraindications
49	To have knowledge about the effects of radiation on environment and human health.
50	Knows the concepts of quality standards, quality, standardization, standards and accreditation in health.
51	To know the rules of ergonomics
52	To learn the rules of behavior in social and business life
53	Ensuring the development of social sensitivity levels
54	To use their personal knowledge, skills and experiences for the benefit of the society as a team
55	Will be able to apply the basic tasks to use the operating system
56	Demonstrate behavior by understanding the information given about health.
57	Know the learning and teaching methods
58	Will have the ability to prepare educational material and conduct effective training.

