



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		The Physics Of Medical Imaging							
Course Code		TG105		Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	3	Workload	73 (Hours)	Theory	2	Practice	0	Laboratory	0
Objectives of the Course		The main objective of this course, while ensuring an understanding of the basic concepts and principles of physics, in the medical field and in particular medical imaging to provide students vocational courses for better understanding of issues, including their technical and increase both theoretical knowledge and skills they learn in practical lessons							
Course Content		1. Measurement units, conversion between units 2. Mechanical, Power, Torque, biomechanical 3. Optical and biological vision 4 acoustic, biological hearing and sound 5. Electricity, magnetism and electromagnetism 6. living organisms and transmission of electricity 7. Medical imaging 8. use of nuclear radiation and their effects on living organisms							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration, Discussion, Case Study, Individual Study					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Nural Öztürk, ders notları
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Week	Weekly Detailed Course Contents	
1	Theoretical	Measurement units, conversion between units
2	Theoretical	Mechanics, force, moment, Newtons laws
3	Theoretical	Work, power and energy
4	Theoretical	Biomechanical applications
5	Theoretical	Optics ve bioimaging
6	Theoretical	Acosutics, biological hearing and sound
7	Theoretical	Electricity
8	Intermediate Exam	Midterm
9	Theoretical	Electromagnetism
10	Theoretical	Current and current flow in living systems
11	Theoretical	Medical Imaging techniques
12	Theoretical	Medical Imaging Equipment
13	Theoretical	Nuclear radiation
14	Theoretical	Applications of radiation in medicine
15	Theoretical	Applications of radiation in medicine

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Assignment	1	13	1	14
Seminar	1	13	1	14
Midterm Examination	1	7	1	8



Final Examination	1	8	1	9
Total Workload (Hours)				73
[Total Workload (Hours) / 25*] = ECTS				3
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	To be able to get information the working principles of Radiology, Nuclear Medicine and Radiotherapy devices, and distinguish their components, use these devices in accordance with operating instructions.
2	To be able to apply the radiotherapy treatment, planned by radiation physicist with instruction of radiotherapist.
3	In the medical field and in particular medical imaging students better understand the issues involving technical vocational courses
4	Understands the basic concepts and principles of physics.
5	Knows the important rules of physics in imaging.

Programme Outcomes (Medical Imaging Techniques)

1	To be able to get information the working principles of Radiology, Nuclear Medicine and Radiotherapy devices, and distinguish their components, use these devices in accordance with operating instructions.
2	To be able to perform the procedures in accordance with the examination of Radiology and Nuclear Medicine imaging .
3	To be able to apply the radiotherapy treatment, planned by radiation physicist with instruction of radiotherapist.
4	To be able to develop and perform the film printing of the images that obtained by imaging techniques of Radiology, Nuclear Medicine
5	To be able to evaluate the images that obtained by imaging techniques of Radiology, Nuclear Medicine in terms of radiographic quality and takes the necessary measures.
6	To be able to know the medical and radiologic terminology, and pronounce and use them correctly
7	To be able to take the necessary measures in accordance with the rules of Radiation safety and protection from radiation, and apply them.
8	To be able to distinguish the anatomical structures on images, obtained by the conventional and cross-sectional imaging techniques of Radiology, Nuclear medicine.
9	To be able to communicate well with patient, their family and the hospital staff.
10	To be able to move with own professional duties, powers and responsibilities of the consciousness and apply the rules of professional ethics.
11	To be able to adapt to a multi-disciplinary team work.
12	To be able to have a basic knowledge of human physiology.
13	To be able to distinguish anatomical structures.
14	To be able to establish a cause-and-effect relationship between events.
15	To be able to have the ability of analytical thinking and problem solving.
16	To be able to apply the basic principles of first aid.
17	It has basic knowledge about human anatomy
18	Understanding the basic concepts and principles of physics while providing, in the medical field and in particular medical imaging students better understand the issues involving technical vocational courses
19	OHS 'basic concepts; work accidents, occupational diseases, occupational physicians, occupational safety specialist, İSGB, OSGB, hazard classes, risk assessment, OHS employee representatives is
20	Have basic knowledge about basic medical practices and makes applications

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5
P1	5	5			
P5			5		
P7				5	5

