

GAZİ UNIVERSITY GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCE								
ECTS FORM								
Course Code and Title	ILT 547 MEDICAL IMAGING TECHNIQUES							
Credits	3							
ECTS	7.5							
Name of Lecturer And e-mail address	Prof. Dr. Elif ORHAN Assoc. Prof. Dr. Sema Bilge Ocak eliforhan@gazi.edu.tr sbocak@gazi.edu.tr							
Department/Program	Advanced Technologies							
Course Type	Elective							
Course Language	Turkish							
Course Semester	Fall/Spring							
Prerequisites	None							
Course Objectives	The students coming from different disciplines are aimed to learn imaging methods and imaging equipments operating principles. During the course the students are aimed to examine the techniques of forming images in digital medium.							
Course Contents	Image and quality characteristics. Energy and radiation, electromagnetic spectrum, radiation units, radioactivity. The basic principle of radiographic imaging. Resolution and blurriness. Detailed imaging. Image formation and characteristics. Fluoroscopic imaging methods. Determination of digital image. Image processing techniques. Mathematical methods for determination tomographic images. Digital detectors. New generation digital detectors.							
Course Learning Outcomes	Ability to use technical /modern materials to be required in her/his works, ability to present oral and written forms in her/his field, ability to work on interdisciplinary studies, ability to rapidly distinguish the true and required knowledge and ability to do analysis of results.							
References (References must be up to date)	Books	1. Nuclear Medical Instruments , B. R. Bairi, McGraw-Hill, ISBN: 0074620266 1994 2. Physical Principles of Medical Imaging, P. Sprawls, ISBN: 0944838545 ,1995 3. Nuclear Medicine Instrumentation, Jennifer Prekeges ISBN: 10 1284021610 , 2013.						
	Journals, Articles, Papers, Symposiums							
Planned learning activities and teaching methods	Theoric	Practice	Lab.	Projects	Assign.	Other	Total	ECTS
	42			76	30		188	7.5
Assessment Methods and Criteria	Quantity (mark with "X")					Percentage (%)		
Midterm Exam	X					30		
Quiz								
Assignment	X					10		
Projects	X					20		
Laboratory								
Practice								
Other								
Final Exam	X					40		
WEEKLY COURSE PLAN								
Week	Contents and topics							
1. Week	Image and quality characteristics							
2. Week	Energy and radiation, electromagnetic spectrum, radiation units, radioactivity							
3. Week	The basic principle of radiographic imaging							
4. Week	Resolution and blurriness							
5. Week	Detailed imaging							

6. Week	Image formation and characteristics
7. Week	Midterm exam
8. Week	Image formation and characteristics
9. Week	Flourosopic imaging methods
10. Week	Determination of digital image
11. Week	Image processing techniques
12. Week	Mathematical methods for determination tomographic images
13. Week	Mathematical methods for determination tomographic images
14. Week	Digital detectors
15. Week	New generation digital detectors
16. Week	New generation digital detectors