COURSE INFORMATON					
Course Title	*Code*	*Semester*	*L+P Hour*	*Credits*	*ECTS*
FUNDAMENTALS OF NUCLEAR MEDICINE DOSIMETRY	PHYS 535	1	3 + 0	3	10

Prerequisites	

Language of Instruction	English
Course Level	Postgraduate
Course Type	Elective
Course Coordinator	
Instructors	Prof Dr. Ş.İpek Karaaslan, Assist. Prof. Nalan Alan Selçuk
Assistants	Türkay Toklu
Goals	To make the posgraduate students have a good understanding on the basic concepts of the dosimetry
Content	Importance of nuclear medicine dosimetry, biological effects of the ionizing radiation, biological effects of radiation, calculation of radiation doses, phantoms and biological models, recent advances in dosimetry

Learning Outcomes	**Teaching Methods**	**Assessment Methods**
1- Knows basic steps of dosimetry	1, 5, 15	C
2-Able to calculate radiation doses	1, 5, 15	C
3-Has detailed information in dosimetry applied to different cases	1, 5, 15	C

Teaching Methods:	1: Lecture, 5: Problem solving, 15: Homework
Assessment Methods:	C: Homework

COURSE CONTENT		
Week	**Topics**	**Study Materials**

1	Importance of Nuclear Dosimetry	
2	Biological effects of ionizing radiation	
3	Biological effects of ionizing radiation	
4	Dosimetry	
5	Calculation of radiation doses	
6	Calculation models of radiation doses and sources	
7	Steps of dose calculation	
8	Case study	
9	Case study	
10	Phantoms and biological models	
11	Bio-distribution: pre clinic	
12	Bio-distribution: human	
13	Bio-distribution: analysis	
14	Recent developments	

RECOMMENDED SOURCES	
Textbook	Sabin M.G., "Fundamentals of Nuclear Medicine Dosimetry", Springer, 2008 McParland B.J., " Nuclear Medicine Radiation Dosimetry", Sprin 2011
Additional Resources	

MATERIAL SHARING	
Documents	
Assignments	5
Exams	1 final

ASSESSMENT		
IN-TERM STUDIES	**NUMBER**	**PERCENTAGE**
Assignment	5	60
Total		60
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE		40
CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE		60
Total		**100**

COURSE CATEGORY	Expertise/Field Courses

COURSE'S CONTRIBUTION TO PROGRAM							
No	Program Learning Outcomes	Contribution					
		1	2	3	4	5	
1	gains the ability to apply the knowledge in physics and mathematics					X	
2	gains the ability to construct an experimental setup, perform the experiment, analyze and interpret the results		X				
3	is supposed to have the education required for the measurements in scientific and technological areas			**X**			
4	is able to work in an interdisciplinary team					**X**	
5	is able to identify, formulate and solve physics problems					X	
6	is conscious for the professional and ethical responsibility					**X**	
7	is able to communicate actively and effectively					X	
8	is supposed to have the required education for the industrial applications and the social contributions of physics			**X**			
9	is conscious about the necessity of lifelong education and can implement it			**X**			
10	is supposed to be aware of the current investigations and developments in the field				X		
11	can make use of the techniques and the modern equipment required for physical applications				X		

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION			
Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration (Including the exam week: 14x Total course hours)	14	3	42
Hours for off-the-classroom study (Pre-study, practice)	14	12	168
Assignment	5	8	40
Final examination	1	3	3
Total Work Load			253
Total Work Load / 25 (h)			10,1
ECTS Credit of the Course			10