



Çanakkale Onsekiz Mart University

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Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Application of Radiation in Medical and Indus.	FZK423	7. Semester	2 + 2	3.0	7.0

Prerequisites	None
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Language of Instruction	English
Course Level	Bachelor's Degree (First Cycle)
Course Type	Elective
Mode of delivery	Face to face
Course Coordinator	Assoc. Prof. Dr. Emine Dilara AYDIN
Instructors	
Assistants	
Course Objectives	The student is intended to be knowledgeable about the medical imaging techniques and the use of radiation in industry.
Course Content	Introduction to medical imaging techniques, radiography, imaging with positron and x-rays and principles of magnetic resonance imaging, industrial applications.
Course Learning Outcomes	<ol style="list-style-type: none"> 1) After completion of this course students will be able to: understand the principles of Magnetic Resonance Imaging 2) Comprehend the principles of Computed Tomography 3) Comprehend the issues need to be considered when applying Ultrasonography and color Doppler ultrasound imaging techniques 4) Have knowledge about several conventional imaging methods

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	Introduction to medical imaging systems	Oral lecture, questions-answers, homework	
2. Week	Introduction to medical imaging systems	Oral lecture, questions-answers, homework	
3. Week	Radiography	Oral lecture, questions-answers, homework	
4. Week	Radiography	Oral lecture,	

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Physics

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		questions-answers, homework	
5. Week	Imaging with SPECT and PET	Oral lecture, questions-answers, homework	
6. Week	Imaging with SPECT and PET	Oral lecture, questions-answers, homework	
7. Week	Imaging with X rays	Oral lecture, questions-answers, homework	
8. Week	Mid-term		
9. Week	Imaging with X ray	Oral lecture, questions-answers, homework	
10. Week	Principles of MRI	Oral lecture, questions-answers, homework	
11. Week	Imaging with MR	Oral lecture, questions-answers, homework	
12. Week	Imaging with MR	Oral lecture, questions-answers, homework	
13. Week	Application of radiation in industry	Oral lecture, questions-answers, homework	
14. Week	Application of radiation in industry	Oral lecture, questions-answers, homework	
15. Week	Application of radiation in industry	Oral lecture, questions-answers, homework	
16. Week	Final Exam		

RESOURCES

Recommended Sources
The physics of medical imaging, Medical Science Series, IOP Publishing Ltd, 1998
An introduction of to the Physics of Diagnostic Radiology, 2nd ed., Philadelphia: Lea and Febigar London, Kimpton, 1978

ASSESSMENT

Measurement and Evaluation Methods and Techniques
Mid-term Exam, Attendance, Problem Solving, Quiz, Final Exam

COURSE CATEGORY

Course Category	Percentage
Support Courses	% 100

CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

Programme Outcomes	Contribution Level	DK1	DK2	DK3	DK4
PY1	5	5	5	5	5
PY2	4	4	4	4	4

PY3	3	3	4	3	3
PY4	1	1	1	1	2
PY5	1	1	1	1	2
PY6	3	3	2	3	3
PY7	1	1	1	1	2
PY8	1	1	2	1	1
PY9	3	4	3	3	3
PY10	3	3	3	4	3
PY11	1	1	1	2	1
PY12	1	1	1	1	2
PY13	1	1	1	1	2
PY14	1	1	1	1	2
PY15	3	3	3	3	4

*DK = Course's Contribution.

	0	1	2	3	4	5
Level of contribution	None	Very Low	Low	Fair	High	Very High

ECTS CREDITS AND COURSE WORKLOAD

Event	Quantity	Duration (Hour)	Total Workload (Hour)
Mid Term Exam Preparation	1	15	15
Assignment 1	4	2	8
Final Exam Preparation	1	18	18
Quiz 1	4	2	8
Class Hours (14 weeks)	14	4	56
Preliminary Study	14	1	14
Further Study	14	4	56
Mid Term Exam 1	1	2	2
Final Exam	1	2	2
Total Workload			179
Total Workload / 25.5 (s)			7.02
ECTS Credit of the Course			7

