Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Radiation Physics	FZK386	6. Semester	2 + 2	3.0	7.0

Prerequisites	None

Language of Instruction	Turkish
Course Level	Bacheclor'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	This course aims to help students gain the basic knowledge about radioactive decays, which are the origins of nuclear radiations and to teach the physics related to the interaction of radiation with matter.
Course Content	Sources of radiation.Interactions of charged particles.Interactions of photons.Interactions of neutrons.Detectors.Detectors.Microdosimetry and radiation effects.Microdosimetry and radiation effects.Dosimetry.Activation.Radiotherapy.Imaging.Imaging.Radiation protection.
Course Learning Outcomes	1) After completion of this course students will be able to:comprehend the biological and environmental effects of ionizing and non-ionizing radiation. 2) Select the correct systems for detection of radiation. 3) Determine working opportunities of physicist on health area 4) Access physics literature effectively and to give a presentation. 5) Comprehend the applications of radiation (radioactive dating, medical and industrial applications).

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	Sources of radiation	Oral lecture, questions-answers, homework	
2. Week	Interactions of charged particles	Oral lecture, questions-answers, homework	
3. Week	Interactions of photons	Oral lecture,	

Quick Access

Physics
- Qualification Awarded
- Level of Qualification
- Qualification Requirements and Regulations
- Specific Admission Requirements
- Recognition of Prior Learning
- Profile of the Program
- Program Key Learning Outcomes
- Occupational Profile of Graduates
- Access to Further Studies
- Course Structure & Credits
- Exam Regulations & Assessment & Grading
- Graduation Requirements
- Mode of Study
- Programme Director(or Equivalent)
- Evaluation Questionnaire
- TYYÇ

Course Information
- Course Information
- Weekly Course Content
- Resources
- Course Category
- CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES
- ECTS credits and course workload

		questions-answers, homework	
4. Week	Interactions of neutrons	Oral lecture, questions-answers, homework	
5. Week	Detectors	Oral lecture, questions-answers, homework	
6. Week	Detectors	Oral lecture, questions-answers, homework	
7. Week	Microdosimetry and radiation effects	Oral lecture, questions-answers, homework	
8. Week	Mid-term Exam		
9. Week	Microdosimetry and radiation effects	Oral lecture, questions-answers, homework	
10. Week	Dosimetry	Oral lecture, questions-answers, homework	
11. Week	Activation	Oral lecture, questions-answers, homework	
12. Week	Radiotherapy	Oral lecture, questions-answers, homework	
13. Week	Imaging	Oral lecture, questions-answers, homework	
14. Week	Imaging	Oral lecture, questions-answers, homework	
15. Week	Radiation protection	Oral lecture, questions-answers, homework	
16. Week	Final Exam		

RESOURCES

Recommended Sources
Introduction to Radiological Physics and Radiation Dosimetry. Frank H. Attix. John Wiley and Sons, Inc., 1986.
Atoms, Radiation, and Radiation Protection. James E. Turner. John Wiley and Sons, Inc., 1995
Introduction to Health Physics. Herman Cember. The McGraw Hill, Inc., 1997.

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	DK5
PY1	4	4	2	4	3	4
PY2	2	3	2	2	2	3
PY3	4	2	2	4	4	4
PY4	2	2	2	1	2	2
PY5	1	2	1	1	1	2
PY6	3	3	2	2	2	3
PY7	1	2	1	1	1	1
PY8	3	3	3	2	2	3
PY9	3	3	2	2	3	3
PY10	2	3	2	1	2	2
PY11	3	3	2	2	3	3
PY12	1	2	1	1	1	2
PY13	2	3	2	1	1	2
PY14	3	3	2	2	2	3
PY15	4	4	4	2	4	3

*DK = Course's Contrubution.

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

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ECTS CREDITS AND COURSE WORKLOAD

Event	Quantity	Duration (Hour)	Total Workload (Hour)
Class Hours (14 weeks)	14	4	56
Final Exam Preparation	1	18	18
Mid Term Exam Preparation	1	15	15
Further Study	14	4	56
Quiz 1	4	2	8
Assignment 1	4	2	8
Preliminary Study	14	1	14
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