Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS
FZK-3020	Radiation Physics	3.00	0.00	0.00	3.00	6.00

Course Detail

Course Language	: Turkish	
Qualification Degree	: Bachelor	
Course Type	: Optional	
Preconditions	: Not	
Objectives of the Course	: 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 Contents	: 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.	
Recommended or Required Reading	: 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.	
Planned Learning Activities and Teaching Methods	: Lecture, Discussion, Report Preparation and / or Presentation.	
Recommended Optional Programme Components	: --	
Instructors	: Prof. Dr. Emine Dilara Atalay	
Instructor's Assistants	: --	
Presentation Of Course	: Face to face / Online	

Course Outcomes

Upon the completion of this course a student :

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.

Preconditions

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Weekly Contents

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods
1.Week	*Sources of radiation				*Lecture, Discussion, Report Preparation and / or Presentation.
2.Week	*Interactions of charged particles				
3.Week	*Interactions of photons				
4.Week	*Interactions of neutrons				
5.Week	*Detectors				
6.Week	*Detectors				
7.Week	*Microdosimetry and radiation effects				
8.Week	*Microdosimetry and radiation effects				
9.Week	*Dosimetry				
10.Week	*Activation				
11.Week	*Radiotherapy				
12.Week	*Imaging				
13.Week	*Imaging				
14.Week	*Radiation protection				

Assesment Methods %

1 Final : 50.000

2 Ödev : 10.000

3 Presentation/Seminar : 40.000

ECTS Workload

Activities	Count	Time(Hour)	Sum of Workload
Ödev	4	3.00	12.00

Activities	Count	Time(Hour)	Sum of Workload
Final	1	3.00	3.00
Individual study before lecture	3	5.00	15.00
Class Hours (14 weeks)	14	3.00	42.00
Presentation/Seminar	3	3.00	9.00
Final Exam Preparation	14	2.00	28.00
Further Study	14	3.00	42.00
Preliminary Study	14	3.00	42.00
			Total : 193.00
			Sum of Workload / 30 (Hour) : 6
			ECTS : 6.00

Program And OutcomeRelation

	P.O. 1	P.O. 2	P.O. 3	P.O. 4	P.O. 5	P.O. 6	P.O. 7	P.O. 8	P.O. 9	P.O. 10	P.O. 11	P.O. 12	P.O. 13	P.O. 14	P.O. 15	P.O. 16	P.O. 17	P.O. 18	P.O. 19	P.O. 20	P.O. 21	P.O. 22	P.O. 23	P.O. 24
L.O. 1	4	3	2	2	2	3	1	2	2	2	3	3	3	2	2	2	2	2	2	3	3	3	2	2
L.O. 2	2	2	3	1	3	2	2	2	2	1	2	2	2	3	3	3	3	3	3	2	2	2	3	3
L.O. 3	4	2	2	2	2	3	2	2	2	1	2	2	2	2	3	2	2	3	2	2	2	2	2	2
L.O. 4	3	3	3	1	2	3	2	2	2	1	2	2	2	2	2	2	3	2	3	2	3	2	2	2
L.O. 5	4	2	2	1	3	1	2	2	2	2	2	2	2	2	3	3	3	2	2	3	2	2	3	2

Ders/Program Çıktıları İlişkisi

P.O. 1	P.O. 2	P.O. 3	P.O. 4	P.O. 5	P.O. 6	P.O. 7	P.O. 8	P.O. 9	P.O. 10	P.O. 11	P.O. 12	P.O. 13	P.O. 14	P.O. 15	P.O. 16	P.O. 17	P.O. 18	P.O. 19	P.O. 20	P.O. 21	P.O. 22	P.O. 23	P.O. 24	P.O. 2
4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2