Course Information

COURSE INFORMATION

Course Title	Code	Semester	L+U Hour	Credits	ECTS
Prevention From Radiation	FZK318	6. Semester	3 + 0	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	Aim of the course is to teach the basic principles of radiation protection, indoor and outdoor radiation sources and radioactive waste management.
Course Content	ENERGY- THE UNIFYING CONCEPT IN RADIATION PROTECTION. ENERGY- THE UNIFYING CONCEPT IN RADIATION PROTECTION. PRINCIPLES OF PROTECTION AGAINST IONIZING RADIATION. PRINCIPLES OF PROTECTION AGAINST IONIZING RADIATION. RADIATION DOSE CALCULATIONS. RADIATION DOSE CALCULATIONS. RADIATION MEASUREMENTS. RADIATION MEASUREMENTS. RADIATION MEASUREMENTS. PRACTICAL ASPECTS OF THE USE OF RADIONUCLIDES. PRACTICAL ASPECTS OF THE USE OF RADIONUCLIDES. IONIZING RADIATION AND PUBLIC HEALTH. EXPOSURE TO NONIONIZING ELECTROMAGNETIC RADIATION. CURRENT ISSUES IN RADIATION PROTECTION: WHERE THE EXPERTS STAND.
Course Learning Outcomes	1) After completion of this course students will be able to: understand basic principles about safety of radiation fields. 2) Apply radiation measuring techniques 3) Use radiation measurement systems. 4) Understand the radiation-matter interactions. 5) Trace technological developments. 6) Use acquired information and abilities in nuclear areas. 7) Have decision ability for radiation protection methods. 8) Get ability and knowledge about radiation protection by research and development facilities.

WEEKLY COURSE CONTENT

Week	Topics	Teaching and Learning Methods and Techniques	Study Materials
1. Week	ENERGY- THE UNIFYING CONCEPT IN RADIATION	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

	PROTECTION.	questions-answers, homework	
2. Week	ENERGY- THE UNIFYING CONCEPT IN RADIATION PROTECTION.	Oral lecture, questions-answers, homework	
3. Week	PRINCIPLES OF PROTECTION AGAINST IONIZING RADIATION.	Oral lecture, questions-answers, homework	
4. Week	PRINCIPLES OF PROTECTION AGAINST IONIZING RADIATION.	Oral lecture, questions-answers, homework	
5. Week	RADIATION DOSE CALCULATIONS.	Oral lecture, questions-answers, homework	
6. Week	RADIATION DOSE CALCULATIONS.	Oral lecture, questions-answers, homework	
7. Week	RADIATION MEASUREMENTS.	Oral lecture, questions-answers, homework	
8. Week	Mid-term Exam		
9. Week	RADIATION MEASUREMENTS.	Oral lecture, questions-answers, homework	
10. Week	RADIATION MEASUREMENTS.	Oral lecture, questions-answers, homework	
11. Week	PRACTICAL ASPECTS OF THE USE OF RADIONUCLIDES.	Oral lecture, questions-answers, homework	
12. Week	PRACTICAL ASPECTS OF THE USE OF RADIONUCLIDES.	Oral lecture, questions-answers, homework	
13. Week	IONIZING RADIATION AND PUBLIC HEALTH.	Oral lecture, questions-answers, homework	
14. Week	EXPOSURE TO NONIONIZING ELECTROMAGNETIC RADIATION	Oral lecture, questions-answers, homework	
15. Week	CURRENT ISSUES IN RADIATION PROTECTION: WHERE THE EXPERTS STAND.	Oral lecture, questions-answers, homework	
16. Week	Final Exam		

RESOURCES

Recommended Sources
Shapiro J., Radiation Protection: A Guide for Scientists, Regulators, and Physicians, Harward University Press, Fourth Edition, June 2002.
James E. Martin, Physics for Radiation Protection, Wiley-Interscience; ISBN: 0471353736; 1 edition (May 12, 2000)
Cember Herman, Introduction to Health Physics, McGraw-Hill, New York, 1996.
Turner J., Atoms, Radiation and Radiation Protection, Wiley Interscience, 1995
Hallenbeck William H., Radiation Protection, Lewis Publishers, Inc.; ISBN: 0873719964; 1st edition (April 19, 1994)
Lester A., Jr. Slaback, Brian Birky, Bernard. Shleien, Handbook of Health Physics and Radiological Health, Lippincott, Williams & Wilkins; ISBN: 0683183346; 3rd edition (January 1998)
Bevelacqua J. J., Contemporary Health Physics, John Wiley & Sons, 1995.
Bevelacqua J. J., Basic Health Physics: Problems and Solutions, Wiley-Interscience; ISBN: 0471297119; 1 edition (January

15, 1999)
Intl Atomic Energy Agency, Calibration of Radiation Protection Monitoring Instruments (Safety Report); ISBN: 9201001002; (January 2000)
Moe and Vallario, Operational Health Physics Training, ANL-88-26, 1988.
International Atomic Energy Agency; Radiation Protection During Operation of Nuclear Power Plants: A Safety Guide, ISBN: 920523088X; (January 1983)

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	DK6	DK7	DK8
PY1	5	5	5	3	3	3	5	2	3
PY2	3	5	3	2	3	3	5	3	5
PY3	4	3	4	5	3	3	3	5	3
PY4	2	2	3	3	2	2	2	2	3
PY5	1	1	1	1	1	1	2	2	1
PY6	3	5	2	3	4	3	3	3	5
PY7	1	2	1	1	2	1	1	1	1
PY8	3	2	3	4	3	5	5	4	3
PY9	4	3	4	3	3	3	5	3	5
PY10	3	3	3	4	3	3	4	3	3
PY11	3	3	3	3	3	3	2	3	3
PY12	1	1	1	1	1	2	1	1	2
PY13	2	2	2	2	3	2	2	2	2
PY14	2	2	1	2	1	2	2	2	2
PY15	3	3	3	4	3	2	3	3	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	3	42
Final Exam Preparation	1	18	18
Mid Term Exam Preparation	1	15	15
Further Study	14	5	70

Quiz 1	4	2	8
Assignment 1	4	2	8
Mid Term Exam 1	1	2	2
Final Exam	1	2	2
Preliminary Study	14	1	14
		Total Workload	179
		Total Workload / 25.5 (s)	7.02
		ECTS Credit of the Course	7