



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Radiation Chemistry							
Course Code		KİM661		Course Level		Third Cycle (Doctorate Degree)			
ECTS Credit	8	Workload	200 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		This course aims to understand principles of radiation chemistry for students							
Course Content		Basic concepts related with radiation, nuclear techniques using for energy production, basic properties of fission, basic properties of fusion, advantages and disadvantages of nuclear technology							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Problem Solving					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	20
Final Examination	1	60
Assignment	4	20

Recommended or Required Reading

1	Shreve's Chemical Process Industries, Austin, George T
2	Çekirdek Kimyası, Gazi İREZ
3	Çekirdek Kimyası ve Radyokimya, Ali Rıza BERKEM

Week	Weekly Detailed Course Contents	
2	Theoretical	History of radiation
3	Theoretical	Basic concepts
4	Theoretical	Structure of atom and atomic theories
5	Theoretical	Radioactivity
6	Theoretical	Energy and kinetics of nuclear reactions
7	Theoretical	Fission
8	Intermediate Exam	Midterm Exam
9	Theoretical	Nuclear fuels
10	Theoretical	Nuclear reactors
11	Theoretical	Chernobyl Nuclear Accident
12	Theoretical	Nuclear weapons
13	Theoretical	Fusion
14	Theoretical	Radioactivity units
15	Theoretical	Using areas of nuclear technology
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Assignment	4	0	8	32
Reading	1	0	70	70
Quiz	3	3	3	18
Midterm Examination	1	12	2	14
Final Examination	1	21	3	24
Total Workload (Hours)				200
[Total Workload (Hours) / 25*] = ECTS				8

*25 hour workload is accepted as 1 ECTS



Learning Outcomes

1	Basic concepts related with radiation
2	Nuclear techniques using for energy production
3	Basic properties of fission
4	Basic properties of fusion
5	Advantages and disadvantages of nuclear technology

Programme Outcomes (Chemistry Doctorate)

1	Depending on the master degree competences, develops, insights and innovates current and advanced knowledge and/or research in proficiency level.
2	Gains high skill levels in using research methods in the field of his/her study.
3	Comprehends the interaction between disciplines related to his/her field. Reaches to original results using his/her expertise in order to analyze, synthesize and evaluate new and complicated ideas.
4	Enlarges the boundaries of his/her field of knowledge by publishing at least one research paper in national and/or international peer-reviewed journals.
5	Defends his/her original opinions related to his/her field before authority and communicates effectively illustrating his/her competence.
6	May communicate and debate written, orally and visually in European Language Portfolio level C1.
7	Follows the developments in computer software and information and communication technologies developed for his/her research area and uses these in order to solve research problems.
8	Collaborates for scientific research with national and international research teams.
9	Contributes to the course of creation and maintenance of knowledge based society and by introducing the scientific, social and cultural developments to the society he/she is living in.

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5
P1	5	5	5	5	5
P2	5	4	5		3
P3	5	4	5		3
P4	5	4	4		3
P5	5	3	5		3
P6	5	3			
P8				4	
P9	4	4			

