



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		The Chemistry of the Lanthanides and the Actinides							
Course Code		KİM635		Couse Level		Third Cycle (Doctorate Degree)			
ECTS Credit	8	Workload	195 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		Teaching of chemistry Elements and compounds in the systematic Lanthanides and Actinides.							
Course Content		General properties of lanthanides and actinides, formations and methods of acquisition, oxidation steps, Magnetic and spectral properties, Coordination number and stereochemistry,the geometric structures of complexes							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Individual Study, Problem Solving					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Cotton and Wilkinson, "Advanced Inorganic Chemistry", Fourth Edition
2	Shriver D.F., Atkins P. W., Langford C. H., (1999) Inorganic Chemistry, Oxford Chemistry
3	Tunalı N.K., Özkar, S., (1999) Anorganik Kimya, Gazi Üniversitesi Yayınevi
4	Demir M., Demirci Ş., Usanmaz A., (2002) Anorganik Kimya
5	Miessler G.L., Tarr D.A., (1999) Inorganic Chemistry, PrenticeHall

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction and general properties of lanthanides
2	Theoretical	Coordination Chemistry
3	Theoretical	Lanthanides history, minerals and naturel occurences
4	Theoretical	Lanthanides production
5	Theoretical	Organo-Metal Chemistry of Lanthanides.
6	Theoretical	Introduction actinide, the presence of metals, separation and preparation.
7	Theoretical	Actinium, thorium, protactinium, uranium, neptunium,
8	Intermediate Exam	Midterm Exam
9	Theoretical	Actinium, Thorium, Protactinium, Uranium, Neptunium,
10	Theoretical	Plutonium, Americium, Curium, Berkelium, and Californium, elements off the Californium.
11	Theoretical	Plutonium, Americium, Curium, Berkelium, and Californium, elements off the Californium.
12	Theoretical	Applications and Chemical Properties of Metals
13	Theoretical	Physical properties, magnetic properties
14	Theoretical	Coordination chemistry of Actinides
15	Theoretical	Organo-Metal Chemistry of Actinides
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Assignment	4	15	2	68
Reading	1	20	1	21
Midterm Examination	1	30	2	32



Final Examination	1	30	2	32
Total Workload (Hours)				195
[Total Workload (Hours) / 25*] = ECTS				8
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	Information of basic concepts about and basic reactions be able to have of lanthanides
2	Information of basic concepts about and basic reactions be able to have of actinides
3	Oxidation steps to respond the theories and practices.
4	Analyze and evaluate data obtained from the magnetic properties of the complexes
5	Examine articles on lanthanide and actinides

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	4	4	4	4	4
P2	4	4	4	4	4
P3	4	4	4	4	4
P4	4	4	4	4	4
P5	4	4	4	4	4

