

AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title	Advanced Physical Chemis	stry				
Course Code	KİM540	Couse Level	Second Cycle (Master's Degree)			
ECTS Credit 9	Workload 231 (Hours)	Theory 3	Practice	0	Laboratory	0
Objectives of the Course	This lecture is designed to study and a thorough back	provide a solid backgrou ground in the fundamen	und for students tals of physical	s who intend t chemistry	o go on to the gr	raduate
Course Content	Basic chemistry laws teach law of thermodynamic, rela some of the events in our e phase diagrams, transition viscosity and surface tension	ning, the ideal gas law, p tionship with daily life of environmental with the b thermodynamics of the on	roperties of gas f the laws of the asic laws of the materials, gerç	s mixtures, kir ermodynamic, ermodynamic, ek gazlar, tea	netic gas theory, trying to explain the states of the ching of issues	the basic that matter, such as
Work Placement						
Planned Learning Activities and Teaching Methods		Explanation (Presenta	tion), Discussio	on, Problem S	olving	
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 Physical Chemistry, P. W. ATKINS
- 2 Physical Chemistry, Ira N. LEVINE
- 3 Fizikokimya, Prof. Dr. Yüksel SARIKAYA

Week	Weekly Detailed Course Contents					
1	Theoretical	Principles, Introduction, Ideal gases				
2	Theoretical	Kinetic-Molecular theory of gases, Real gases				
3	Theoretical	Critical point, Liquids and evaporation				
4	Theoretical	Viscosity and surface tension of liquids, solids X ray diffraction kırınımı				
5	Theoretical	The laws of thermodynamics, I., II. And III. Laws				
6	Theoretical	Entropy and probability				
7	Theoretical	The states of the matter				
8	Intermediate Exam	MIDTERM EXAM				
9	Theoretical	General properties of mixture				
10	Theoretical	Thermochemistry, Chemical equilibrium and free entalpy				
11	Theoretical	Physical equilibrium and phase diagrams, Liquid-solid-vapor equilibria, Solution properties				
12	Theoretical	Colloids, The laws of chemical kinetics				
13	Theoretical	Experimental methods in chemical kinetics				
14	Theoretical	Joule-Thompson manner				
15	Theoretical	Fugasity, Thermodynamic pressure				
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	100	100
Quiz	4	2	4	24
Midterm Examination	1	12	2	14



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Final Examination	1	16	3	19			
		231					
[Total Workload (Hours) / 25*] = ECTS							
*25 hour workload is accepted as 1 ECTS							

Learni	ing Outcomes		
1	To teach basic chemical laws		
2	The ideal gas law and properties of gas mixtures		
3	Kinetic gas theory		
4	The basic law of thermodynamic and relationship with c	daily	life of the laws of thermodynamic
5	To be able to explain the events in our environment with	th th	e basic laws of thermodynamic
6	The states of the matter, phase diagrams, transition the	ermo	dynamics of the materials
7	To be able to describe the submission of new issues su	ich a	s viscosity and surface tension
8	To be able to find out the deviation from ideals		
9	The real gases		

Programme Outcomes (Chemistry Master)

1	To be able to gain proficiency in depths and analysis by statistical methods in the same or a related area depending on the undergraduate competence,.
2	To be able to use the knowledge of his/her field and the skills to solve problems and/or applications in interdisciplinary research.
3	To be able to adopt to evaluate the information and skill his/her field by critical approach.
4	To be able to evaluate the effect of important persons, case and fact on his/her field applications.
5	To be able to gain the ability to discuss write and orally present to a group of literate listener.
6	To be able to communicate orally and written in a foreign language at least at European language B2 level.
7	To be able to use computer programs related to his/her field and have skills for informatics communication.
8	To be able to be careful in protecting social, scientific and cultural ethics in collection data, application and presentation.
9	To be able to develop strategic, political and application plans in his/her field and may evaluate the outcomes in quality periods.

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

	L1	L2	L3	L4	L5	L6	L7	L8	L9
P1	5	5	5	5	5	5	5	5	5
P2	5	4	5		3	3	3	3	4
P3	5	4	5		3	3	3	3	3
P4	5	4	4		3	3	3	3	
P5	5	3	5		3	3	3	3	
P6	5	3							
P8				4					
P9	4	4							

