

# (SYLLABUS)

1. (\*)

Item with (\*) are only for the ABEEK Program.

(Year)	2016		(Semester)	1	
(Instructor)			(Course Title)	3	
(Course No.)	2150235101	(Class)	01	(Course Classification)	-
	100			-	
(Open to)	3	(Credit)	3 (0)	(Class hour per week)	3
(*) (ABEEK Classification)		(*) (ABEEK Requirement)		(Department)	
(Office)		(Telephone)		(e-mail)	
(*) (Teaching Assistant)		(*) (Office Hour)			
(Course Description)	This course is a continuation of Physical Chemistry 1 and 2, focusing on the statistical thermodynamics, molecular interactions, molecules in motion, and chemical kinetics.				
(Ssq)	(Course Objectives)				
1	The concepts and machinery of statistical thermodynamics will be discussed.				
2	Students will examine the concepts of the rates and kinetics of chemical reactions.				
(Lecture Type)	( 90 %)	( 00 %)	( 00 %)	( 10 %)	
가 (Course Grading)	Midterm Exam(100 ), Final Exam(100 ), Attendance/Homework/Attitude(100 )				
(Required Texts)	* /Atkins' Physical Chemistry/P. W. Atkins and J. de Paula/Oxford/2014/10th Edition/ * / / / / /2014/10th Edition/Atkins' Physical Chemistry/				
(*) (Bulletin Board)					
(*) (Prerequisite Courses)					

2.

(Week)	(Keyword)	(Description)	(Texts)	(Note)
1	Introduction	[1 ] Introduction		
2	Review of Physical Chemistry 1 and 2 Lectures	[2 ] Review of Physical Chemistry 1 and 2 Lectures		
3	Chap. 15: Statistical Thermodynamics 1	[3 ] Chap. 15A The Boltzmann distribution, Chap. 15B Molecular partition functions		
4	Chap. 15: Statistical Thermodynamics 2	[4 ] Chap. 15C Molecular Energies, Chapter 15D The canonical ensemble		

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(Week)	(Keyword)	(Description)	(Texts)	(Note)
5	Chap. 15: Statistical Thermodynamics 3	[ 5 ] Chap. 15E The internal energy and the entropy, Chapter 15F Derived functions	Homework 1	
6	Chap. 16: Molecular Interactions 1	[ 6 ] Chap. 16A Electric properties of molecules,		
7	Chap. 16: Molecular Interactions 2	[ 7 ] Chap. 16B Interactions between molecules, Chap. 16C Liquids	Homework 2	
8	Midterm Exam	[ 8 ] Midterm Exam		
9	Chap. 19: Molecular Interactions 1	[ 9 ] Chap. 19A Transport in gases,		
10	Chap. 19: Molecular Interactions 2	[ 10 ] Chap. 19B Motions in liquids		
11	Chap. 19: Molecular Interactions 3	[ 11 ] Chap. 19C Diffusion	Homework 3	
12	Chap. 20: Chemical Kinetics 1	[ 12 ] Chap. 20A The rates in chemical reactions, Chap. 20B Intergrated rate laws, Chap. 20C Reactions approaching equilibrium		
13	Chap. 20: Chemical Kinetics 2	[ 13 ] Chap. 20D The Arrhenius eqation, Chap. 20E Reaction mechanisms		
14	Chap. 20: Chemical Kinetics 3	[ 14 ] Chap. 20F Examples of reaction mechanisms, Chap. 20G Photochemistry, Chap. 20H Enzymes	Homework 4	
15	Review of Physical Chemistry 3 Lecture	[ 15 ] Review of Physical Chemistry 3 Lecture		
16	Final Exam	[ 16 ] Final Exam		

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