

	MARMARA UNIVERSITY Faculty of Arts and Sciences															
	Chemistry Department															
	SYLLABUS															
	2015-2016 Fall										Course level: Lisans (First Cycle)					
Course Code	Course Name					Course Type	Course Pool (if exists)	Weekly Course		Local Credit	ECTS Credit	Semester				
CHEM4188	Chemical Kinetics					Zorunlu		T	A	6	6	2				
Prerequisite (Ders Kodu ve Adı, Min Harfli Başarı Notu)					Prerequisite to (Ders Kodu ve Adı, Min Harfli Başarı Notu)					Weekly Time & Classroom Schedule (Gün, Saat Aralığı, Derslik)						
<Bu dersi bağlayan önceki derslerin kodu, adı, min hb> {Her bir dersi birbirinden noktalı virgülle ayırınız.}					<Bu dersin bağladığı sonraki derslerin kodu, adı, min hb> {Her bir dersi birbirinden noktalı virgülle ayırınız.}											
Course Lecturer	Doç.Dr. Suzan Abdurrahmanoğlu					Teaching Assistants	<Unvan, Adı, Soyadı>									
Office/Room No	C-426					Office/Room No										
Phone+extension	02163451186-1492					Phone+extension										
E-mail	suzana@marmara.edu.tr					E-mail										
Web						Web										
Office hour schedule	Monday 10.00-12.00					Office hour schedule										
Course Objectives																
Textbooks and or References	Course Web page:															
	1.	Chemical Kinetics, K.J. Laidler														
	2.	Physical Chemsitry , P. Atkins, J. De Paula														
	3.	Physical Chemsitry , Thermodynamics, Statistical Mechanics, Kinetics , A. Cooksy 1st Edition.														
Course Learning Outcomes	1.	Define the basic terms related Chemical Kinetics														
	2.	Define the rate of reaction and discuss its dependence on reactant concentration														
	3.	Find the order and rate constant from concentration/time data using integrated rate law expression														
	4.	Compare the predictions of collision theory and activated coplex theory and experiment														
	5.	Recongize and classify the large variety of complex reactions														
	6.	Understand the ways in which solvent can affect the reaction in solution														
Program Outcomes x Course Learning Outcomes Matrix	Program Outcomes															1:Weak; 2:Medium; 3:Strong
	PK1	PK2	PK3	PK4	PK5	PK6	PK7	PK8	PK9	PK10	PK11	PK12	PK13	PK14	PK15	Course Learning Outcomes
	3													3		DK1. Define the basic ter...
	2		3			3								3		DK2. Define the rate of r...
		2	3			3								3		DK3. Find the order and r...
		2	3			3								3		DK4. Compare the predicti...
	2		2			2								3		DK5. Recongize and class...
	2		3			3								3		DK6. Understand the ways ...
2	2	3	0	0	3	0	0	0	0	0	0	0	3	0	TOTAL EFFECT	
Language or Instruction	Learning Activities and Teaching Methods										Course Presentation Form					
İngilizce	<Anlatım/sunum, soru-cevap, problem çözme, örnek olay, ödev										soru-cevap, tartışma, örnek olay, Power point sunum, karatahta					

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				T	A			
<b>CHEM4188</b>	Chemical Kinetics	Zorunlu		2	0	6	6	2
Week	Date	Weekly Course Content				Reference No - Section		
1. Week		Introduction to kinetics, basic concepts				1,2,3		
2. Week		Reaction rates, Rate laws				1,2,3		
3. Week		Integrated rate law expressions				1,2,3		
4. Week		Sequential first order reactions, Parallel reactions				1,2,3		
5. Week		Temperature dependence of rate constants, Arrhenius equation				1,2,3		
6. Week		Reversible reactions and equilibrium				1,2,3		
7. Week		Reaction rate theories, collision theory				1,2,3		
8. Week		Midterm Exam						
9. Week		Potential energy surfaces, activated complex theory				1,2,3		
10. Week		Diffusion controlled reactions				1,2,3		
11. Week		Complex reaction mechanisms and rate laws				1,2,3		
12. Week		The Lindemann Mechanism				1,2,3		
13. Week		Catalysis				1,2,3		
14. Week		Radical chain reactions				1,2,3		
15. Week		Photochemistry				1,2,3		
16. Week		Study Week						
17. Week		Final Exam						
Evaluation Tool		YSSL (BDS)	BNAL (BDS)	BDKL (BDS)	Calculation of Grade			
Evaluation Tools and Weight %	Evaluation Tools		Quantity	Date	Weight in Total (%)	Weight in Semester Evaluation (%)		
	Final Exam				60.00	0.00		
	Final-Make up Exam (if exists)				60.00	0.00		
	<b>Semester Evaluation Tools</b>				100.00	100.00		
	Midterm Exam(s)				30.00	30.00		
	Quiz(es)				10.00	10.00		
	Project							
	Homework							
	Laboratory/Atelier							
	Presentation / Seminar / Demo							
	Research / Report / Other							
	Attendance							
Student Workload Calculation								
Tool	Weekly Avr. Hour	Semester Total Hour	Tool	Weekly Avr. Hour	Semester Total Hour	Tool	Weekly Avr.	Semester Total hour
Theoretical Hours	2.00	28	Midterm Exam and Preparation	1.00	14	Atelier and Preparation		
Applied Hours	0.00	0	Quiz and Preparation	1.00	14	Presentation/Seminar/Demo and Preparation	1.00	14
Pre-class Self Study	1.00	14	Project and Preparation			Research/ Report/ Other and Preparation	1.00	14
Pre-application/Post-application Self Study	1.00	14	Homework and Preparation	1.00	14	Final Exam and Preparation	1.00	14
<b>Total Student Workload Hours:</b>		140	<b>1 ECTS Credit = 25 Student Workload Hours</b>			<b>Workload Calculation:</b>	Hesap Doğru	