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 T	Weekly Course A	Local Credit	ECTS Credit	Semester
CHEM4187	Biochemistry Laboratory	Zorunlu			2	4	4	7

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.}	Tuesday, 9,30-11.20, B-403

Course Lecturer	Prof. Dr. Ayşe OGAN	**Teaching Assistants**	<Unvan, Adı, Soyadı>
Office/Room No	GZFC 417	**Office/Room No**	
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Web		**Web**	
Office hour schedule	Monday 9.30-12.20	**Office hour schedule**	

Course Objectives

Application of Biochemistry topics to laboratory

Textbooks and or References

Course Web page:

1. Modern Experimental Biochemistry Rodney F. Boyer 3rd ed. 2001, Benjamin/Cummings, San Francisco
2. Biochemistry Lab. Manual

Course Learning Outcomes

1. Communicate the results of biochemistry experiments in writtemn report and technical gaphics
2. Distinguish amino acids, bases and buffres and indicate the importance of pH to biological systems
3. Experimentally apply chromatographic seperation procedures (thin layer chromatography, paper chromatograhy, electoropheresis)
4. Evaluate standart techniques for protein purification and quantitation
5. Experimentally determine kinetic constants and mechanism of inhibition of enzymes
6. Isolate, manipulate and analyze DNA

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										DK1. Communicate the resu...
3															DK2. Distinguish amino ac...
			3												DK3. Experimentally apply...
			3												DK4. Evaluate standart te...
				3											DK5. Experimentally deter...
			3												DK6. Isolate, manipulate ...
3	0	0	3	3	3	0	0	0	0	0	0	0	0	0	TOTAL EFFECT

Language of Instruction	Learning Activities and Teaching Methods	Course Presentation Form
İngilizce	Experimental at Laboratory	Practical experiments and demonstrations, discussion of the results

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				T	A			
CHEM4187	Biochemistry Laboratory	Zorunlu			2	4	4	7

Week	Date	Weekly Course Content	Reference No - Section
1. Week		Preparation of buffer solutions	
2. Week		Titration curves of amino acids and determination of their isoelectric points	
3. Week		Separation of amino acids by paper chromatography	
4. Week		Examination of some properties of amino acids and proteins	
5. Week		Purification of proteins I: Precipitation	
6. Week		Purification of proteins II: Dialysis and Rehydration	
7. Week		Quantitative determination of proteins	
8. Week		Midterm Exam	
9. Week		Sample preparation and gel casting for SDS-PAGE	
10. Week		SDS-Polyacrylamide Gel electrophoresis and determination of MW of proteins	
11. Week		Enzymes I: Isolation of polyphenol oxidase enzyme from Potato	
12. Week		Enzymes II: Kinetic parameters of Potato polyphenol oxidase	
13. Week		Enzymes III: Effect of Temperature and pH on potato polyphenol oxidase	
14. Week		N-terminal analysis of peptides and polypeptides	
15. Week		DNA isolation and denaturation	
16. Week		Study Week	
17. Week		Final Exam	

Evaluation Tool	YSSL (BDS)	BNAL (BDS)	BDKL (BDS)	Calculation of Grade

	Evaluation Tools	Quantity	Date	Weight in Total (%)	Weight in Semester Evaluation (%)
Evaluation Tools and Weight %	**Final Exam**			60,00	100,00
	Final-Make up Exam (if exists)			60,00	100,00
	Semester Evaluation Tools			40,00	100,00
	Midterm Exam(s)			28,00	70,00
	Quiz(es)			4,00	10,00
	Project				
	Homework				
	Laboratory/Atelier				
	Presentation / Seminar / Demo				
	Research / Report / Other			8,00	20,00
	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			Midterm Exam and Preparation		10	Atelier and Preparation		
Applied Hours	2,00	28	Quiz and Preparation	1,00	14	Presentation/Seminar/ Demo and Preparation		
Pre-class Self Study			Project and Preparation			Research/ Report/ Other and Preparation	1,00	14
Pre-application/Post-application Self Study	1,00	14	Homework and Preparation			Final Exam and Preparation		10
Total Student Workload Hours:	90		***1 ECTS Credit = 25 Student Workload Hours***			**Workload Calculation:**	Hesap Doğru	