AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Natural Macromolecules								
Course Code	BYK505		Couse Level		Second Cycle (Master's Degree)				
ECTS Credit	5	Workload	125 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	To learn natural macromolecules and their functions								
Course Content	Chemical and three-dimensional structure of proteins, protein synthesis and post-synthesis modifications, X-ray crystallography and structure analysis of proteins, structure-function relations in proteins, chemical and three-dimensional structure of nucleic acids, nucleic acid structure analysis, nucleic acid structure – function relation, synthesis of nucleic acids, chemical and three-dimensional structure of the polysaccharides, types of polysaccharides, polysaccharide structure - function, polysaccharides synthesis, membrane structure and dynamics of complex macromolecules.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion								
Name of Lecturer(s)									

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading	
1	Biochemistry by Lehninger
2	An Introduction to X-ray Crystallography:Michael M. Woolfson
3	Biochemistry: Jeremy M. Berg

Week	Weekly Detailed Course Contents	
1	Theoretical	Chemical and three-dimensional structure of proteins
2	Theoretical	Protein synthesis and modifications
3	Theoretical	Protein structure analysis and X-ray crystallography
4	Theoretical	Structure-function relationship of proteins
5	Theoretical	Chemical and three-dimensional structure of nucleic acids
6	Theoretical	Structure analysis of nucleic acids
7	Theoretical	Structure-function relationship in nucleic acids
8	Intermediate Exam	Quiz
9	Theoretical	Synthesis of nucleic acids
10	Theoretical	Chemical and three-dimensional structure of polysaccharides
11	Theoretical	Polysaccharide types and structure-function relationship of polysaccharides
12	Theoretical	Synthesis of polysaccharides
13	Theoretical	Structure and dynamics of membranes
14	Theoretical	Structure and dynamics of membranes
15	Theoretical	Complex macromolecules
16	Final Exam	Final exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	16	1	3	64
Assignment	5	1	6	35
Individual Work	2	1	12	26
			Total Workload (Hours)	125
			[Total Workload (Hours) / 25*] = **ECTS**	5
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	To have information about proteins
2	Having formation about nucleic acids
3	To have information about polysaccharides
4	learning the structure and dynamics of membranes
5	To have information about complex macromolecules

Programme Outcomes *(Biochemistry (Medical) Master)*	
1	To have basic theoretical knowledge about biochemistry and to help understanding biochemistry
2	To have the basic laboratory knowledge, apparatus and methods used in biochemistry
3	Analysis: To be able to analyze information critically
4	Synthesis: To be able to synthesize and adapt the knowledge in the field from different directions
5	Evaluation: To critically evaluate research in the field

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	5	4	5	5	5
P2	4	4	4	4	5
P3	5	4	4	4	5
P4	4	4	4	5	4
P5	5	5	4	5	5