AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title		Biochemistry of the Immune System							
Course Code		BYK632		Couse Level		Third Cycle (Doctorate Degree)			
ECTS Credit	3	Workload	75 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		Basic and molecular knowledge about immunology, serological reactions and application areas, allergic reactions, immune response diseases, immunity and infectious diseases							
Course Content		Cells and tissues of the immune system, characteristics of innate and adaptive immunity, antigen, antibody structure and tasks, roles of cytokines in immune response, regulation of the immune response, immune system disorders and pathologies caused by immune system disorders, tumor immunology.							
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	Immune System: Lorrie Klosterman
2	Understanding the Immune System: Lydia Woods Schindler

Week	Weekly Detailed Course Contents	
1	Theoretical	Cells and organs of the immune system
2	Theoretical	Natural immune response, inflammation, fever, septic shock, adaptive immune response
3	Theoretical	Antigens, T-Cells and cellular response: Immunogens and antigens, super antigens
4	Theoretical	Delivery of antigens to T lymphocytes, T-cytotoxic cells and natural killer cells and T-helper cells
5	Theoretical	Antibodies and Immunity: Antibodies, antibody production and complement, classical and alternative complement activation
6	Theoretical	Serology: Primary reactions (ELISA, IUD and FIA), Secondary reactions (Precipitation, Agglutination and application methods)
7	Theoretical	Serology: Agglutinations with erythrocytes; Blood Groups and their importance
8	Intermediate Exam	Immune System Biochemistry Midterm Exam
9	Theoretical	Serology: Secondary Reactions (Complement Combination Test, Neutralization), Toxin-Antitoxin reactions
10	Theoretical	Prevention of immunity and infectious diseases: natural immunity, artificial immunity, immune sera and new immunization strategies
11	Theoretical	Immune response diseases
12	Theoretical	Receptors and Immunity: Receptors in natural and adaptive immunity
13	Theoretical	MHC (Major Tissue Compatibility Complex) proteins, genes and differentiation, tissue-organ transfer
14	Theoretical	Antibody proteins, genes and differentiation: TCR proteins, genes and differentiation
15	Theoretical	Clonal selection and tolerance; Secondary signals: cytokines and chemokines
16	Final Exam	Immune System Biochemistry Final Exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	1	2	42
Midterm Examination	1	14	2	16

Final Examination	1	15	2	17
			Total Workload (Hours)	75
			[Total Workload (Hours) / 25*] = **ECTS**	3
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	Obtaining information about allergic reactions
2	To learn organs and cells of immune system
3	To learn the mechanisms of natural immune response
4	To learn adaptive immune response mechanisms
5	Obtaining immunological information about the prevention of infectious diseases

Programme Outcomes *(Biochemistry (Medical) Doctorate)*	
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	5	5	5	5
P2	4	5	5	4	4
P3	5	4	4	5	5
P4	4	5	4	5	4
P5	5	5	5	4	5