



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Immunotoxicology							
Course Code		VFT651		Course Level		Third Cycle (Doctorate Degree)			
ECTS Credit	6	Workload	150 (<i>Hours</i>)	Theory	2	Practice	0	Laboratory	0
Objectives of the Course		To teach the organs of immune system in animals, cellular and humoral immunity, interaction of antigen-antibody, immunotoxic substances and their mechanism and properties.							
Course Content		Basic function of immune systems, its components and relations with toxilogical substances are examined.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Case Study, Individual Study, Problem Solving					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Principles and Methods of Toxicology, A. Wallace HAYES, Edward BROTHERS; Ann Arbor Press, 2001.
2	Handbook of Experimental Pharmacology – 199; Comparative and Veterinary Pharmacology, Fiona CUNNINGHAM, Jonathan ELLIOTT, Peter LEES (Editors); Springer Press, 2009.
3	Principles of Biochemical Toxicology, 3rd Edition, John TIMBRELL; Taylor & Francis Group Press, London, 2000.
4	Plant Phenolics and Human Health: Biochemistry, Nutrition, Pharmacology, Cesar G FRAGA (Editor); A John Willey & Sons Inc. Publication, 2010.

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction of immune system
2	Theoretical	The organs of immune system in animals
3	Theoretical	The basic elements of immune system
4	Theoretical	The stimulation of immune system
5	Theoretical	The supression of immune system
6	Theoretical	The mechanism of immune system
7	Theoretical	Article discussion
8	Intermediate Exam	Midterm exam
9	Theoretical	General anesthetics affecting the immune system
10	Theoretical	Hormones affecting the immune system
11	Theoretical	Environmental and food contaminants affecting the immune system
12	Theoretical	Industrial substances affecting the immune system
13	Theoretical	Mycotoxins affecting the immune system
14	Theoretical	The other substances affecting the immune system



15	Theoretical	Discussion
16	Final Exam	Final

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	2	70
Assignment	3	8	2	30
Individual Work	2	8	2	20
Midterm Examination	1	12	2	14
Final Examination	1	14	2	16
Total Workload (Hours)				150
[Total Workload (Hours) / 25*] = ECTS				6
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	To learn the organs of immune system in animals, to learn cellular and humoral immunity, to learn interaction of antigen-antibody.
2	To learn immunotoxic substances, their properties and their mechanism.
3	To learn knowledge and propose suggestions on the area.
4	To find out and use resources about the profession in the area.
5	To give lectures and/or presentations and discuss with professionals in the area.

Programme Outcomes (Pharmacology and Toxicology (Veterinary Medicine) Doctorate)

1	Gains expert knowledge on field of pharmacology and toxicology in veterinary medicine and, gains expert knowledge on interdisciplinary interaction in pharmacology and toxicology
2	To be equipped with the knowledge to develop original ideas about necessary issues in the field by using of both graduate and expertise levels knowledge, to be able to develop original definitions, products and diagnostic procedures, etc. via deepening and questioning these knowledge.
3	Develops and uses strategies in his/her field of expertise in PhD Program of Pharmacology and Toxicology
4	Reviews, evaluates and interprets any data (field observations, available scientific information etc.) towards a specific purpose.
5	Gains expert knowledge on the function and basic pharmacological features of pharmacology and sub-branches of science, relationship between the drug and poison, pharmacokinetic, effects of the drugs, the dose-intensity and dose-effect relationship.
6	Gains expert knowledge on the function and basic toxicological features of poison, classifications and types of poisoning, toxicokinetic, general principles of treatment of poisoning.
7	Can offer training to technical staff who will work in pharmacology and toxicology laboratory
8	Reach to competence to prepare courses at the undergraduate level
9	Determines and uses laboratory equipment and consumables in a pharmacology and toxicology laboratory.
10	To be able to plan an interdisciplinary project and build team for the known or new defined problems and to manage and complete such a project when necessary.
11	To share his/her knowledge in the field with others by attending at field-related or other congresses, panels, symposiums, workshops, seminars, article discussions and problem solving sessions, etc., and to contribute to the solution in the team by establishing relations with the experts in different fields.
12	To contribute the scientific knowledge in the field via publications in national and international peer-reviewed scientific journals.
13	Takes roles in vocational organizations and institution.
14	Forms ideas to solve complex problems using theoretical and practical information gained throughout the pharmacology and toxicology education.
15	To adopt lifelong learning as a principle and acknowledge that the information gained through research is the most valuable gain.
16	Knows and protects rights of ideas and industrial property (patent right)

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				
P2				5	
P3			4	5	
P4	4		4		



P5		5			
P6		3			
P8	4	4			4
P11			5		5
P12				4	
P14			5		5

