



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Lung Mechanics and Principles of Gas Exchanges							
Course Code		VFZ523		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	6	Workload	150 (<i>Hours</i>)	Theory	1	Practice	2	Laboratory	0
Objectives of the Course		Investigation of the importance of the function of gas exchanges in the lung and respiratory during physiological processes							
Course Content		Lung volumes and capacities, the molecular basis of diffusion of gases, the composition of alveolar air, diffusion of gases trough the respiratory membrane, regulation of respiration							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Demonstration, Discussion, Case Study, Individual Study, Problem Solving					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	38
Final Examination	1	60
Quiz	2	1
Term Assignment	1	1

Recommended or Required Reading

1	Reece W.O. (2008) Dukes Veteriner Fizyoloji Cilt I ve II, Onikinci Baskı (Türkçe Çeviri). Ed: Yıldız S. Medipres, Malatya
2	Guyton AC, Hall JE (2001) Tıbbi Fizyoloji Onuncu baskı (Türkçe Çeviri). Ed: Çavuşoğlu H. Nobel Tıp Kitabevi, İstanbul
3	Noyan A. (2003). Yaşamda ve Hekimlikte Fizyoloji. 13. baskı, Meteksan-Ankara
4	Randall D., Burggren W., French K, Fernald R., (1997). Eckert Animal Physiology. Mechanisms and Adaptations. 4th Ed., New York
5	G.C. Whittow et al. (1998). Sturke's Avian Physiology
6	Willmer P., Stone G., Johnston I. (2005). Environmental Physiology of Animals. 2nd Ed. Blackwell Publishing
7	Despopoulos A., Silbernagl S. (2003). Color Atlas of Physiology 5th Ed. Thieme, Stuttgart New York
8	Vander et al. (2001). Human Physiology: The Mechanism of Body Function, 8th Ed. The McGraw-Hill Companies
9	Nilsson G.E. (2010). Respiratory Physiology of Vertebrates. Life with and without Oxygen. Cambridge Uni. Press

Week	Weekly Detailed Course Contents	
1	Theoretical	The evolution of the lung
	Practice	Respiratory movements
2	Theoretical	Physiological functions of respiratory system
3	Theoretical	Pulmonary blood flow kan akışı
	Practice	The effect of exercise on breathing
4	Theoretical	Gas exchange in alveol
	Practice	The effects of respiratory-related acidosis on the respiration
5	Theoretical	Gas transportation in lung
	Practice	The effects of respiratory-related alkalosis on the respiration
6	Theoretical	Other functions of respiratory system



6	Practice	Structure of the experimental design
7	Theoretical	Nervous control of respiration
	Practice	The effects of hiccups on respiration
8	Theoretical	Midterm
	Practice	Midterm
9	Theoretical	Lung volume and capacities
	Practice	Clinical use of respiratory volumes and capacities
10	Theoretical	Chemical regulation of respiration
	Practice	Respiratory volumes: Tidal volume and inspiratory reserve volume
11	Theoretical	Respiratory acidosis and its compensation mechanisms-I
	Practice	Respiratory volumes: Expiratory reserve volume and residual volume
12	Theoretical	Respiratory acidosis and its compensation mechanisms -II
	Practice	Respiratory capacities -I
13	Theoretical	Respiratory alkalosis and its compensation mechanisms -I
	Practice	Respiratory capacities -II
14	Theoretical	Respiratory alkalosis and its compensation mechanisms -II
	Practice	The effects of air content on the respiratory volumes
15	Theoretical	Presentations
	Practice	The effects of surfactant on the respiratory volumes

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	1	14
Lecture - Practice	14	0.5	2	35
Assignment	4	8	1	36
Term Project	1	30	1	31
Quiz	2	2	1	6
Midterm Examination	1	12	1	13
Final Examination	1	14	1	15
Total Workload (Hours)				150
[Total Workload (Hours) / 25*] = ECTS				6

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To have knowledge about ain function of lung
2	To learn the roles of lungs in the important physiological mechanisms except its respiratory functions
3	To know about physiological mechanisms in transportation of oxygen and carbon dioxide
4	To have knowledge about regulation of respiration the basis the body needs
5	To learn the respiration mechanics

Programme Outcomes (Physiology (Veterinary Medicine) Master)

1	Understands and defines the interdisciplinary interaction with the associated fields
2	Uses theoretical and practical information learned in the education



3	Creates solution proposals by using background education
4	Combines and interprets the information from different disciplines, and creates solution proposals and scientific information to contribute the solution process, when needed
5	Involves in professional organizations and institutions related with the educational background
6	Takes responsibility for individual and group work, and do the assignments in line with the skills
7	Communicates with the professionals out of the field when it is necessary, and contributes to the solution as a team member
8	Understands the production and publishing methods of scientific information
9	Determines the source and the type of information that is needed related with the field and chooses the activities that s/he wants to participate, by using his/her critical thinking abilities that is developed in the education
10	Excels technological devices both for professional and social purposes
11	Compiles any kind of data related with the field (field observations, produced scientific information etc.) and analyzes and interprets the results according to the aims of the research
12	Determines the environmental health rules and applies them for prevention
13	Applies the knowledge gained in professional level with the awareness of the needs of the region and the country, and develops a defense capability
14	Conceptualizes the phenomena and the events related with the field, studies scientific methods and techniques, interprets results; analyzes and hypothesizes methods in accordance with the results and designs solution or treatment alternatives addressing the problems
15	Follows up the updates of information in the field by using all kinds of sources (scientific information, legislations etc.), and uses when needed

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	2	2	2	2	2
P2	3	3	3	3	3
P3	3	3	3	3	3
P4	2	2	2	2	2
P5	2	2	2	2	2
P6	1	1	1	1	1
P7	1	1	1	1	1
P8	1	1	1	1	1
P9	2	2	2	2	2
P10	1	1	1	1	1
P11	4	4	4	4	4
P12	1	1	1	1	1
P13	1	1	1	1	1
P14	1	1	1	1	1
P15	3	3	3	3	3

