

#### AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title	urse Title Pulmonary Gas Dynamics and Ventilation							
Course Code	VFZ620		Couse Level		Third Cycle (Doctorate Degree)			
ECTS Credit 6	Workload	150 (Hours)	Theory	1	Practice	2	Laboratory	0
Objectives of the Course	To learn the p	hysiological n	nechanisms c	of respirato	ry system			
Course Content	Diffusion of oxygen and carbon dioxide in the respiratory membranes, oxygen and carbon dioxide transport in the blood and body fluids, respiratory mechanics, lung volumes and capacities, alveolar ventilation rate, respiration functions of the airways							
Work Placement N/A								
Planned Learning Activities and Teaching Methods		Explanation (Presentation), Experiment, Demonstration, Discussion, Case Study, Individual Study, Problem Solving						
lame of Lecturer(s)								

#### **Assessment Methods and Criteria**

Method	Quantity	Percentage (%)		
Midterm Examination	1	38		
Final Examination	1	60		
Quiz	4	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 Co	ekly Detailed Course Contents				
1	Theoretical	The primary function of the respiratory system				
	Practice	Recording of normal breathing movements				
2	Theoretical	Transport of oxygen and carbon dioxide in the lungs				
	Practice	Voluntary apnea and its respiratory effects				
3	Theoretical	Oxygen and carbon dioxide transport in tissues				
	Practice	The effects of exercise on breathing movements				
4	Theoretical	The factors affecting gas exchange in the respiratory membrane				
	Practice	The effects of respiratory acidosis models on respiration				
5	Theoretical	Lung elasticity and respiration muscles				
	Practice	The effects of respiratory alkalosis models on respiration				
6	Theoretical	Pulmonary blood flow				
	Practice	The structure of the respiratory volume and capacity measuring apparatus				
7	Theoretical	The respiratory coefficient				
	Practice	The effect of hiccups on respiration				
8	Theoretical	Midterm				
	Practice	Midterm				
9	Theoretical	Dead space and lung volumes and capacities				
	Practice	Clinical use of the respiratory volume and capacity				
10	Theoretical	The gas transport in exercise				



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10	Practice	The respiratory volumes: tidal volume and inspiratory reserve volume
11	Theoretical	Ventilation control
	Practice	The respiratory volumes: Expiration reserve volume and residual volume
12	Theoretical	Non-respiratory functions of the lungs-I -
	Practice	The respiratory capacities-I
13	Theoretical	Non-respiratory functions of the lungs-II -
	Practice	The respiratory capacity-II
14	Theoretical	Нурохіа
	Practice	The effects of the air content on respiratory volumes
15	Theoretical	Presentations
	Practice	The effects of surfactant on respiratory volumes

## **Workload Calculation**

Activity	Quantity	Preparation	Duration	Total Workload		
Lecture - Theory	14	1	1	28		
Lecture - Practice	14	1	2	42		
Assignment	4	1	1	8		
Term Project	1	24	1	25		
Quiz	4	2	1	12		
Midterm Examination	1	10	1	11		
Final Examination	1	23	1	24		
		To	tal Workload (Hours)	150		
[Total Workload (Hours) / 25*] = <b>ECTS</b> 6						

\*25 hour workload is accepted as 1 ECTS

### Learning Outcomes

1	1.To learn with the task of mechanisms of the respiratory system
2	2.Knowledge of the surface area and the blood flow in the lungs
3	3.Mechanisms of gas exchange in the lungs
4	4. The other functions of lungs besides oxygen and carbon dioxide transports
5	To learn the regulation of respiration

#### Programme Outcomes (Physiology (Veterinary Medicine) Doctorate)

1	Has a deep and broad knowledge about the field and the interdisciplinary area related with the field through the achievements gained in undergraduate and professional levels
2	Has the knowledge to create original ideas, analyze them and develop definition/product/diagnosis methods by using the knowledge gained in undergraduate and/or professional experience, when needed
3	Is knowledgeable about theories and practices in methodological and scientific research methods to run an independent research
4	Excels in the laboratory, clinical and similar fields by using the theoretical and practical information gained in former education, and has the ability to create solutions in related fields
5	Designs and develops scientific methodology for the advanced level/newly defined/emerged problems about the field
6	Excels in the known scientific methods in the field for the advanced level/ newly defined/emerged problems
7	Designs unique researches and implements independently
8	Analyzes, synthesizes and evaluates the new ideas in related fields by using critical thinking
9	Plans, creates teams and carries out the interdisciplinary research projects in order to create solutions to the known/newly defined problems
10	Joins to congresses, panels, symposiums, workshops, seminars, article discussions and problem solving sessions in different disciplines, and exchanges information with the other professionals to contribute to the solutions
11	Broadens the borders of scientific information by publishing scientific articles in national and/or international peer-reviewed journals
12	Creates new ideas and methods to contribute to the technological, social and cultural progress, or to help the development of information society by using the theoretical, practical, independent research, abilities responsibly
13	Designs and implements social projects with the awareness of creating an information society
14	Compiles and interprets any type of data (field observation, scientific knowledge etc.) in accordance with the aims
15	Develops and uses strategies about related topics with the field



16	Implements and defends institutional and practical information and abilities in accordance with the needs of the country and the world, and changes when necessary
17	Follows up and uses all the updates about the field (scientific information, legislations etc.), and has the qualification to change them
18	Adopts lifelong learning as a principle and acknowledges that the information gained through research is the most valuable gain

# 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	4	4	4	4	4
P3	1	1	1	1	1
P4	4	4	4	4	4
P5	2	2	2	2	2
P6	2	2	2	2	2
P7	1	1	1	1	1
P8	3	3	3	3	3
P9	1	1	1	1	1
P10	3	3	3	3	3
P11	4	4	4	4	4
P12	2	2	2	2	2
P13	1	1	1	1	1
P14	4	4	4	4	4
P15	4	4	4	4	4
P16	4	4	4	4	4
P17	4	4	4	4	4
P18	4	4	4	4	4

