PHYSIOLOGY I

1	Course Title:	PHYSIOLOGY I
2	Course Code:	VET1009
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	1
6	Semester:	1
7	ECTS Credits Allocated:	3.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	2.00
10	Laboratory (hour/week):	0
11	Prerequisites:	none
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. FAHRÜNISA CENGİZ
15	Course Lecturers:	Prof. Dr. Fahrünisa CENGİZ Prof. Dr. Nurten GALİP Prof. Dr. Cenk AYDIN Doç. Dr. Murat YALÇIN Yrd. Doç. Dr. Füsun AK SONAT
16	Contact information of the Course Coordinator:	fnisa@uludag.edu.tr +90 224 294 1271 Uludağ Üniv. Veteriner Fak. Fizyoloji Anabilim Dalı Bursa Turkey 16059
17	Website:	
18	Objective of the Course:	Physiological concepts and cell physiology. Body fluids and buffer systems. Blood physiology. Nerve and muscle physiology
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	
	1	General physiological concepts
	2	Cell organels and physiology
	3	Body fluids
	4	Buffer systems and their working process
	5	General blood physiology
	6	Red blood cells and their role
	7	White blood cells and their role
	8	Thrombosite and coagulation
	9	Nerve physiology

	10	Muscle physiology
21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Introduction of Physiology, basic concepts in physiology, diffusion, facilitated diffusion, active transport, osmosis and osmotic pressure, determination of osmotic pressure, osmolarity, suspension, emulsion, imbibitions, pinositosis and phagositosis terms	Introduction of the laboratory equipments.
2	Cell physiology, protoplasma, water and salts, proteins, lipids, carbonhydrate, nucleic acids, DNA, RNA, rRNA, tRNA, mRNA, nucleus, sex chromatine, endoplasmic reticulum, golgi apparatus, ribosoms, lizozoms, mithocondria, peroxisom, centrosom, plastids, vacuole, cell membrane.	Hematocrit and determination of hemoglobin.
3	Body fluids and tampons, fluid compartments of body, composition of body fluids, bicarbonate, phosphate, protein and hemoglobin buffer systems.	Counting erythrocytes.
4	Blood physiology, production of erythrocyte, anemias, blood cells, plasma, serum, anticoagulants, hemorrhage and Vit. K correlation, erythrocyte production, regulation of erythrocyte numbers, erythrocyte counts, hemoglobin, hemoglobin types, anemia types, blood volume, determination of blood volume, breakdown of erythrocytes, hematocrit, sedimentation, fragility of erythrocytes.	Counting leukocytes
5	Leukocytes, platelets, neutrophils, eosinophils, basophils, monocytes, lymphocytes, leukocyte formula	Measurement of erythrocyte sedimentation rate.
6	Blood coagulation mechanism, extrinsic and intrinsic sytems, fibrinolysis, blood coagulation anamolies, determination of coagulation time,blood plasma	Measurement of erythrocyte diameter.
7	Blood groups and blood transfusion, Rh system, erythroblastosis fetalis, blood groups in animals, determination of blood group and Rh factor.	Preparing and staining the blood film.
8	Lymph circulation, lymph composition and formation, lymph nodes, oedema and its etiology.	Determination of clotting time and blood groups.
9	Muscle system, muscle cell, skeletal muscle, smooth muscle, heart muscle, fatigue of skeletal muscle	Percentage of differential leukocyte counts.
10	Visceral smooth muscle, vascular smooth muscle, muscle contraction, muscle metabolism	Erythrocyte osmotic fragility test, experimental hemolysis in erythrocytes.
11	Nervous system, neuron, the conduction of action potential along membrane, classification and characteristics of nerve fibre	Neuromuscular applications.
12	Degeneration and regeneration of nerves, synapsis, inhibiting and stimulating synapsis, neurotransmitters	Examination of reflexes in decerebrated frog.

13	Structure of spinal cord, spinal cord reflex mechanism, nuclei of the brain stem, medull pons and midbrain functions, brain stem reticular formation, thalamus, hypothalamus, pyramidal and extrapramidal systems, limbic system, cerebellum and motor control, adaptation in receptors	Observation of the effect of shock and different stimulation in spinal frog (P Group A)
14	Divisions of the autonomic nervous system, structural comparision of autonomic divisions, functions of autonomic divisions, structure and function of the sympathetic division of autonomic nervous system, structure and function of the parasympathetic division of autonomic nervous system	Observation of the effect of shock and different stimulation in spinal frog (P Group B).
22	Textbooks, References and/or Other Materials:	1- CUNNINGHAM JG.,KLEIN, BG. Textbook of Veterinary Physiology, Saunders, 2007. 2- MARIEB, EN. Human Anatomy & Physiology Laboratory Manual, Pearson, Benjamin Cummings, 2006. 3- NOYAN, A. Yaşamda ve Hekimlikte Fizyoloji, Meteksan Ankara, 2005. 4- GUYTON, AC. HALL JE. Textbook of Medical Physiology, Saunders, 2005. 5- YILMAZ, B. Fizyoloji. Medisan Yayınevi, Ankara, 2000. 6- YAMAN, K. Fizyoloji. Ezgi kitabevi, Bursa, 2004.
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	40.00
Quiz	1	10.00
Home work-project	0	0.00
Final Exam	1	50.00
Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade		50.00
Contribution of Final Exam to Success Grade		50.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		

24	**ECTS / WORK LOAD TABLE**

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	0	0.00	0.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	17.00	17.00
Others	0	0.00	0.00
Final Exams	1	17.00	17.00
Total Work Load			90.00
Total work load/ 30 hr			3.00
ECTS Credit of the Course			3.00

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	**PQ2**	**PQ3**	**PQ4**	**PQ5**	**PQ6**	**PQ7**	**PQ8**	**PQ9**	**PQ10**	**PQ11**	**PQ12**	**PQ13**	**PQ14**	**PQ15**	**PQ16**
ÖK1	5	4	3	3	4	5	4	4	4	4	4	4	0	0	0	0
ÖK2	5	5	4	4	4	5	5	5	5	5	5	5	0	0	0	0
ÖK3	5	5	4	4	5	5	5	5	5	5	5	5	0	0	0	0
ÖK4	5	5	5	5	5	5	5	5	5	5	5	5	0	0	0	0
ÖK5	5	5	5	5	5	5	5	5	5	5	5	5	0	0	0	0
ÖK6	5	4	5	5	5	5	5	5	5	5	5	5	0	0	0	0
ÖK7	5	5	4	5	5	5	4	4	5	5	5	5	0	0	0	0
ÖK8	5	5	4	4	5	5	4	4	5	5	5	5	0	0	0	0
ÖK9	5	4	3	3	4	5	4	4	4	4	4	4	0	0	0	0
ÖK10	5	5	4	4	4	5	5	5	5	5	5	5	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**