(Animal physiology) Course Catalogue

2022-2023

College/ Institute	**Shaqlawa technical college**		
Department	**Veterinary-morning**		
Module Name	**Animal physiology**		
Module Code	**ANP204**		
Semester	**Second semester**		
Credits	**6**		
Module type	**Prerequisite** ☐ **Core** x **Assist.** ☐		
Weekly hours	**4hr**		
Weekly hours (Theory)	**(2)hr Class**	**(3)hr Workload**	
Weekly hours (Practical)	**(2)hr Class**	**(1)hr Workload**	
Lecturer (Theory)	**Msc.Fawzeya Beia Toma**		
E-Mail& Mobile NO.	**fawzeyabya@epu.edu.iq**		
Lecturer (Practical)	**Msc.Fawzeya Beia Toma**		
E-Mail & Mobile NO.	**fawzeyabya@epu.edu.iq**		

Course Book

Course Description	**Course overview:** This course aims to provide a comprehensive theoretical knowledge of physiological terminology and principles using a body systems approach in a comparative context, with an emphasis on domestic species. Body systems covered are the endocrine, urinary, reproductive, nervous and sensory systems
Course objectives	- To familiarize students with the principles and basic facts of Animal Physiology and with some of the laboratory techniques and equipment used in the acquisition of physiological data. - The emphasis will be on mammalian physiology but there will be some coverage of other vertebrate taxa. - The course will focus on organ-system physiology, however, cellular and molecular mechanisms will be discussed in order to present a current view of physiological principles. - Furthermore, emphasis will be placed on nervous, muscular, cardiovascular, respiratory, renal, digestive, and endocrine physiology. Where appropriate, basic chemical and physical laws will be reviewed in order to enhance and to promote student understanding. - The laboratory component of the course is designed to reinforce the topics discussed in lecture, as well as to familiarize students with some of the laboratory techniques and equipment used in the acquisition of physiological data.
Student's obligation	1-The student attention in all theoretical and practical lectures in academic year. 2-Completion of all tests. 3-Attendance in exams. 4-Write or prepare reports.
Required Learning Materials	1. Daily preparation for a lecture 2. Giving students an opportunity to participate by giving seminars about the topics 3. Make quizzes before the lecture for the purpose of testing the extent of acceptance For each lecture we have seminar by groups each group from two student prepearing report and power point

Forms of teaching	Lecture halls with data show equipment for lecture presentations, white board, overhead projector, posters, slides, laboratory, informatic laboratory. It is important that all students maintain active communication channels throughout the year. The primary communication channels to students in this course are as follows: Moodle: Students should regularly login to the moodle website (http://epu.moodle.edu.iq/) for important course-related announcements. Teaching materials and course documentation will also be posted on this site.
Assessment scheme	- 6% Mid. Theory exam 10% Mid. practical exam 4% Quiz 40% Activity 25% final practical 15% final theory
Specific learning outcome:	At the end of the course the student will have understood and know in detail the fundamental mechanisms that regulate cell function and intercellular communication strategies, who preside over the functions of the nervous system and the modulation of autonomic functions. He will have learned knowledge about the functions of the blood. He will have learned and will be able to analyze the digestive strategies in different species in order to build the theoretical foundations of nutrition and animal nutrition.
Course References:	"Physiology of Domestic Animals" Sjaastadt-Sand-Hove. Scandinavian Veterinary Press second edition (2010). Duke's Physiology of domestic Animals, 12th Edition. William O'Reace Editor. Principles of Animal Physiology Games.A.Wilson Colliern Macmillan Publisockendon

Course topics (Theory)	**Week**	**Learning Outcome**

Study the natural functions of the various body systems and the importance of hormones in regulating those physiological actions with the study of reproductive models in different animals	**1**	To familiarize students with the principles and basic facts of Animal Physiology
General definitions - The cell's physiology - the precise components and functions of the cell.	**2**	Be able to know the cell parts
The nerve cell and the gill cell / Neuronal Signalling, neurotransmitters and muscle types	**3**	With functions be able to know the nerve
Nervous system. Its parts and functions	**4**	Be able to know the functions of every parts
Blood and Its components and functions	**5**	Be able to know the bloodcomponent (cells and liquid parts)
Lymph and lymphatic system	**6**	lymph and each part of system
Cardiovascular system, myocardium, cardiac system heart sound, blood pressures and the factors that effects on it	**7**	Identify the different parts of the circulatory system, including the heart, blood vessels, and blood
Respiratory system, breathing mechanism, Homeostasis and Gas Exchange and Oxygen Transport	**8**	Structure and functions of the respiratory system, Regulation of ventilation
Digestive system: eating and chewing the taste - components of saliva and controlling the secretion of the digestive process in the mono stomach - enzymes and hormones	**9**	Structure and functions of the Digestive system, digestion in monogastric animals.
Digestion in the ruminants - the process of rumination - the role of microorganism in the digestion of nitrogen cycle in ruminants	**10**	Structure and functions of the Digestive system, digestion in ruminants animals.
The urinary system - the parts of the system - the formation of urine - the process of urination - the balance between acidity and base in the body	**11**	Structure and functions of the kidney nephrons, including glomerular filtration, tubular reabsorption, tubular secretion, and excretion.
Endocrine glands: the relationship between the nervous	**12**	Functions of the endocrine system

system and the endocrine system		with focus on classic endocrine glands.
Hormones, the sources, types and functions. controlling the excretion	**13**	Principles of hormone action,
The composition and production of milk and the factors affecting it	**14**	Structure and functions of the mammary gland in animals.
Practical Topics (If there is any)	**week**	**Learning Outcome**
Laboratory instructions - Preparing laboratory animals for scientific experiments.	**1**	Student be able to know thelaboratory safety and components
Electrical properties of the myocardium and the electrocardiogam	**2**	Be able to know the resting membrane potential and action potential propagation along the axon
Transfusion of blood from different animals and the use of anticoagulants and their properties	**3**	How to blood transfusion inAnimals and types of anticoagulants.
Prepare blood stains and smears	**4**	How to make smear and stain blood sample
Calculate the coagulation time and the bleeding time	**5**	Be able to know the time of coagulation and bleeding of blood.
Calculate the percentages of the types of leukocytes	**6**	Be able to know the percentage counts of WBCs
The white blood cell count	**7**	Be able to know the count of WBCs
The red blood cell count	**8**	Be able to know the count of RBCs
Platelet count, Erythrocyte fragility and viscosity –	**9**	Be able to know the

packed cell volume. PCV,erythrocyte sedimentation rate ESR,		preparation of solutions
Blood grouping, estimation of haemoglobin	**10**	Be able to know how identify blood group and Hb rate
Blood pressure measuring and heart sounds	**11**	How measure blood pressure and identify the normal heart sounds.
Measuring respiratory volumes and calculating the capacities vital rate	**12**	How measure the volumes of respiration and vital rate.
Pregnancy detection and oestrus stag detection by vaginal smear	**13**	How take vaginal smear and detect oestrus or pregnancy.
Measure the contraction of the smooth muscle of the intestine by electrocardiogram	**14**	Be able to know the process of muscle contraction

Questions Example Design

Q1. Definition
Q2 multi choice
Q3 right or false
Q4 fill in the blank
Q5 describe process

Q1/ what is the function :

1- Plasma membranes

2- Ribosome

3- Blood

4- Lysosome

5- Neutrophil

Q2/ Fill the blank?

1- Red blood cell life ------------ day.
2- Plateletes formed in the ------------------- .
3- They have tow kind of endoplasmic reticulum ------------ ,----------------.
4- Cell are the basic unit of ----------------- ,----------------.
5- Hemoglobin is found in the ----------------- .
6- Mature red blood cell do not have -----------------.

Q3- Draw the cell and name the parts?

Q4- Classification of the white blood cell?

Extra notes:

Every week we make quiz and activity of student by external reports