

Department of ……Biology………………….

College of ………Science……………………….

University of …Salahaddin……………………….

Subject: …Practical Animal Physiology

Course Book

Lecturer's name

1. Dr.

2- Firas Khalid Qasim

Academic Year: 2023/2024

Course Book

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| 1. Course name | Practical Animal Physiology | |
| 2. Lecturer in charge | 1- Firas Khalid Qasim | |
| 3. Department/ College | Biology/science | |
| 4. Contact | e-mail: [firas.qasim@su.edu.krd](mailto:firas.qasim@su.edu.krd) - phone : 07504558907 | |
| 5. Time (in hours) per week | Practical: 6 hr/week - Sunday from 8.30 am to 2.30pm | |
| 6. Office hours | Wednesday from 8.30 am to 2.30pm | |
| 7. Course code |  | |
| 8. Teacher's academic profile |  | |
| Firas Khalid | Graduated from biology department collage of science in  1997 .  Finished the MS.c in zoology – physiology – 2005  Staff in biology department- became lecturer in 2012–  teaching activities  Animal physiology – hematology – genetics – biophysics –  General biology – endocrine .  Learning is our goal and the main target .  1-The Effects of ExposuretoWelding Fume on Pulmonary Function Test in Erbil City Welders  2-EFFECTS OF MELATONIN , METFORMIN  AND THEIR COMBINATION ON SOME LIPID PROFILES AND SERUM ELECTROLYTES IN SUCROSE TREATED MALE ALBINO RATS  3-THE ROLE OF HIGH DOES OF  POMEGRANATE ONP53EXPERTION IN HEALTHY AND DACARBAZIN’S TREATED EXPERMANTAL MALE RATS  4- EFFECTS OF HUMAN UMBILICAL CORD BLOOD AND POMEGRANATE JUICE ON BLOOD GLUCOSE , LIPID PROFILE AND HEMATOLOGICAL INDICES IN A DIABETIC MICE MODEL  5- The effects of Pomegranate pure extract on dacarbazine-induced  Hepatotoxicity in male albino rats  6- Effects of Wielding Fume on Some Hematological Parameters in Male Albino Rats  7- Effects of Pomegranate Seed Oil Extract on Antigen Induced Arthritis In Rabbits Model  8- Effects of Pomegranate Seed Oil and Tamoxifen on Mastectomy Breast  Cancer Women  10- New host record of bbreviata baltazardi ( nematode: physalopteridae )from the lizard , Laudakia ( Agama) nupta in Rawandoz mountains , Kurdistan region | |
| 9. Keywords | Physiology, Animal physiology, Human physiology. | |
| 10. Course overview:  Introduction to the physical and chemical principles governing the lives of animals with  an emphasis on understanding the physiological problems animals face, how those problems  vary in relation to animals' environments, and the processes by which animals solve their  problems. The laboratory focuses on independent investigation. | | |
| 11. Course objective:  To develop an understanding of the physiological problems animals face, how those problems vary in relation to the animals’ environments, and the processes by which animals solve their problems.  To learn about current “hot” research topics in animal physiology by becoming familiar with the primary literature To develop the ability to think critically about issues in animal physiology and write about those in an effective manner.  To become proficient at developing research questions, formulating and then utilizing methods to answer those questions, analyzing data and formulating results, and effectively  communicate results of investigations to others through writing and other means.  To learn to properly and safely use animals and modern laboratory equipment (e.g., computers) to conduct research. | | |
| 12. Student's obligation  Exam policy: Student Should take 2 exam during each course. There will be no make-up  exams for absences students without medical report. \*Classroom polices: 1- Attendance:  You are strongly encouraged to attend class on a regular basis, as participation is important  to your understanding of the material. This is your opportunity to ask questions. You are  responsible for obtaining any information you miss due to absence 2- Lateness: Lateness  to class is disruptive 3- Electronic devices: All cell phones are to be turned off at the  beginning of class and put away during the entire class. 4-Talking : During class please refrain from side conversations. These can be disruptive to your fellow students and your professor 5- No Disrespectful to both the professor and to your fellow students. | | |
| 13. Forms of teaching  PowerPoint and white board. | | |
| 14. Assessment Grades for the lecture component of the course will comprise 35% of the overall grade for this course. To obtain the final mean grade of  In-class quizzes/homework assignments 20%  SECTION TEST 1 theory of labs sessions 5%  SECTION TEST 2 practical 5%  SECTION TEST 3 oral 5%  CUMULATIVE FINAL EXAM: 9 am 35% | | |
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| 16. Course Reading List and References‌:  ▪ Key references:  ▪ Useful references:  ▪ Magazines and review (internet): | | |
| 18. Practical Topics | |  |
| |  |  | | --- | --- | | weeks | Lecture Topic | | Week 1 | Introduction to basic concepts in animal physiology lab | | Week 2 | Homeostasis | | Week 3 | Diffusion and Osmosis , Osmosis in Biological Membrane, EGG OSMOSIS and Tonicity | | Week 4 | TWITCH VIA NERVE AND TWITCH VIA MUSCLE , frog dissection , Single Muscle Twitch via nerve and direct muscle stimulation | | Week 5 | SUMMATION, TETANUS, AND FATIGUE IN THE GASTROCNEMIUS MUSCLE OF THE FROG | | Week 6 | The study of basic physiological properties of nerve impulses | | Week 7 | Study the effects of pancuronium on muscle contraction response induced by direct electrical stimulation of sciatic nerve. | | Week 8 | The study of reflex | | Week 9 | SECTION TEST 1 | | Week 10 | Cardiovascular Physiology of the Frog | | Week 11 | Physiological effects of chemicals and physicals factors on heart rhythm | | Week 12 | Drugs effects on frog heart beat | | Week 13 | Study of Smooth Muscle Contraction in Unstimulated Rabbit Jejunum | | Week 14 | The Measurement of Blood Pressure | | Week 14 | The Electrocardiogram ( ECG) and Heart conductivity | | Week 16 | Rodent : Anesthesia and Blood Collection | | Week 17 | SECTION TEST 2 ORAL | | Week 18 | Respiratory systems Pulmonary Function Tests | | Week 19 | The study of Brain (Electroencephalograph) EEG | | Week 20 | The study of Sensory organs | | Week 21 | The Digestive System | | Week 22 | The Study of pancreas function | | Week 23 | The study of adrenal function | | Week 24 | The Study liver function on lipid metabolism | | Week 25 | The study of male and female organs | | Week 26 | SECTION TEST 3 | | Week 27 | The Study of Renal Physiology | | Week 28 | Course seminar submission and discussion | | Week 29 | REVISION | | Week 30 | CUMULATIVE FINAL EXAM: 9 am | |  |  | | | Lecturer's name  ex: (3-4 hrs)  ex: 14/10/2019 |
| 19. Examinations:  There will be three 1-hour section tests and a final exam during the semester. The section test will be two practical and one oral with extra daily quiz and course seminars .  Section tests will test material covered in each of the eight lecture course segments.  The final exam will follow a similar format to the section tests but will cover the entire lecture course content. The section tests are intended to provide students with feed-back and the opportunity to demonstrate and improve their understanding of the course material throughout the semester, so that they can excel in the final exam.  The section tests and the final exam will include sample identifications, multiple choice and short answer tests to test students’ knowledge of specific information. They may also include un- or partially labeled diagrams of metabolic pathways to test students’ knowledge of these systems. Multiple choice.  Examples of exam questions |  Q1/ A/Identify The pointed sample ?    While to keep the body homeostasis through the exercises the heart rate will :-  Slow b- normal c- fast d- stop for while  B/ The plasma liquid considerable as :-  a- hypertonic solution against red blood cell.  b- hypotonic solution against red blood cell.  c- isotonic solution against red blood cell.  d- hypo ,hyper and Isotonic depending plasma gradients concentration.  D/ While the region of the heart which responsible to produce the beats pulls found in :-  a- left atrium , b- right atrium , c- His bundle , d- both atrium , e- both ventricles | | |
| 20. Extra notes:  Here the lecturer shall write any note or comment that is not covered in this template and he/she wishes to enrich the course book with his/her valuable remarks. | | |