JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY

SCHOOL OF BIOLOGICAL, PHYSICAL, MATHEMATICS AND ACTURIAL SCIENCES

UNIVERSITY EXAMINATIONS FOR THE AWARD OF A DEGREE OF BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES

2ND YEAR 1ST SEMESTER 2023/2024 ACADEMIC YEAR

MAIN CAMPUS - REGULAR

COURSE CODE:	**SBB 1203**
COURSE TITLE:	**ANIMAL PHYSIOLOGY I**
EXAM VENUE:	**STREAM: (BSC)**
DATE:	**EXAM SESSION:**

TIME: 2 HOURS

Instructions:

1. **Answer ALL questions in Section A and Any two questions in Section B**
2. **Candidates are advised not to write on question paper**
3. **Candidates must hand in their answer booklets to the invigilator while in the examination room**

SECTION A: SHORT ANSWER QUESTIONS (30 MARKS)

1. Distinguish between aestivation and hibernation in animals (3marks)
2. State the difference between endotherms and ectotherms (3 marks)
3. Describe the steps of respiration in animals (3 marks)
4. Fluid pressure is very low in the veins. Explain how blood gets back to the heart (3 marks)
5. Describe how the mammalian heart is protected (3 marks)
6. State the differences between myoglobin and haemoglobin (3marks)
7. Identify three categories of arteries and state their functions (3 marks)
8. Briefly describe digestion process in the mouth (3 marks)
9. Explain the functions of the large intestines in digestion process of a mammal (3 marks)
10. Explain the functions of the large intestines in digestion process of a mammal (3 marks)

SECTION B: ESSAY QUESTIONS (40 MARKS)

11. Describe the components and functions of the mammalian respiratory system in detail. (20 marks)
12. Describe the adaptations of for regulating body temperature in animals. (20 marks)
13. Describe the circulatory systems found in vertebrates using relevant examples. (20 marks)
14. Describe the structure of a mammalian skeletal muscle in detail (20 marks)

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DEPARTMENT OF BIOLOGICAL SCIENCES

COURSE OUTLINE

SBB 1203 ANIMAL PHYSIOLOGY I

1. **The course objectives**
    1. To provide you with an understanding of the fundamental principles of animal physiology;
    2. To understand how these principles are incorporated into the adaptations of different animal groups;
    3. To provide ability to research, discuss and answer questions on animal physiology;
    4. To provide practical experience in investigating physiological questions, and collecting, analyzing, interpreting, and reporting experimental data

Expected Learning Outcomes

1. Develop knowledge about the functions of organs and tissues in the human body
2. Have an appreciation of how the parts of the body are linked into a functioning whole
3. Understand the principle of homeostasis and the methods used by the body to maintain this
4. Have practical knowledge of physiological techniques

Course Content

Structure in relation to the physiology of important biological functions and processes within the mammalian body: cells and tissues in mammals; relations of tissue structure to functions; muscular and skeletal system; heat balance and regulation of body temperature; circulatory; respiratory; digestive systems

S/N	Lecture Topic	Week of Delivery
1	Introduction of mammalian physiology	
2	Importance of biological functions and processes within the mammalian body	
3	CELLS AND TISSUES IN MAMMALS	
4	Cells and tissues in mammals	
5	Heat balance and regulation of body temperature	
6	Heat balance and regulation of body temperature	

	CONTINUOUS ASSESSEMENT I	
7	Circulatory System	
8	Respiratory system	
9	Digestive System	
	CONTINUOUS ASSESSEMENT II	

Textbooks / Resources

1. Campbell, Neil A.,1946-2004 et al; Biology :a global approach; Eleventh edition; Pearson Education Limited, 2018.
2. Randall, David J. et al; Eckert animal physiology : mechanisms and adaptations; Ed. 5; W.H. Freeman and Co, 2001.
3. Sherwood, Lauralee, Klandorf, Hillar, Yancey, Paul H; Animal physiology : from genes to organisms; 2nd ed., International ed; Brooks/Cole ;Cengage Learning [distributor], 2013 (This is the main recommended text. The other texts listed are also useful for some topics).
4. Silverthorn, Dee Unglaub et al; Human physiology : an integrated approach; 4th ed; Pearson/Benjamin Cummings, 2007.
5. Dr. Doug Facey - 302B Cheray Hall; 654-2625; *dfacey@smcvt.edu*
6. Required texts:
7. Moyes, C. D., and P. M. Schulte. 2008. Principles of Animal Physiology, second edition. Pearson/Benjamin Cummings. Boston, MA.
8. Pechenik, J. A. 2004, or more recent. A Short Guide to Writing About Biology, 5th edition (or more recent). Pearson Longman. Boston, MA.

Designation	Name	Signature	Date
Lecturer	**Dr Nyakeri Evans** 0721750390	EVans	10th Sept 2023
Head of Department			10th Sept 2023