هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	**Animal physiology**
Course Code:	**ZOOL351**
Program:	**Biology**
Department:	**Biology**
College:	**College of Science**
Institution:	**Jazan University**
Version:	**4**
Last Revision Date:	**Second Semester 2022**

Table of Contents:

A. General information about the course:

Course Identification	
1. Credit hours:	3 Hours
2. Course type	
a. University ☐ College ☐ Department☐ Track☐ Others☐	
b. Required ☐ Elective☐	
3. Level/year at which this course is offered:	Level 7 – 3rd Year Biology Program

4. Course general Description:

Animal physiology course deals with studying and understanding the functional activities and its mechanisms in the biological body. This course describes some topics in animal physiology such as nervous System (Nerves, Neurons, Transmission of nerve impulse), nervous system (Receptor Types and their Action), Circulation (Systems, Blood Flow and Pressure, Regulation), respiration, locomotion, and reproduction.

5. Pre-requirements for this course (if any): ZOOL252

6. Co- requirements for this course (if any): NONE

7. Course Main Objective(s):

This course is designed to provide students with the following concepts to:

1- Understand the principles, basic facts, and their significance to animal physiology.
2- Emphasis on studying the physiological aspects of nervous, muscular, digestive, excretory, respiratory, reproductive, and circulatory systems.
3- Investigate the cytoplasmic and plasma membrane receptors.
4- Examine the structure, function of the different types of muscles and principles of muscle contraction.

Study the mechanisms of digestive enzymes, gas exchange in lungs, the mode of action of hormones, the spermatogenesis /oogenesis, and the mechanism of blood clotting.

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	44	100%
2.	E-learning	--	--
3.	Hybrid • Traditional classroom • E-learning	--	--
4.	Distance learning	--	--

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	**22**
2.	**Laboratory/Studio**	**22**
3.	**Field**	**-**
4.	**Tutorial**	**-**
5.	**Others (specify) Self Learning**	**--**
	Total	**44**

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Define all principles, concepts, theories, and aspects related to Animal Physiology.	K1.1	Lectures,	Quizzes, Short Answer Question, MCQs
1.2	Differentiate (Compare) between different mechanisms, functions, practices, and aspects related to Animal Physiology.	K2.1	Lectures, Lab work	Quizzes, Short Answer Question, MCQs
1.3	Explain all processes, mechanisms, definitions, theories, mode of actions of all Animal Physiology.	K2.2	Lectures, Group Discussion	Assignments
2.0	**Skills**			
2.1	Apply theoretical knowledge and understanding in laboratory experiments and techniques.	S1.2	Lectures, Lab work	Quizzes, Short Answer Question
2.2	Examine theoretically or the slides, photos, diagrams, or statements of Animal Physiology.	S1.3	Lectures, Lab work, Group Discussion	Quizzes, Short Answer Question, Lab work assessment
2.3	Propose solutions for different complex physiological approaches.	S3.2	Lab work	Short Answer Question, Assignments
2.4	Write a report about any practical or theoretical tasks related to Animal Physiology.	S3.3	Lectures, Lab work	Assignments
3.0	**Values, autonomy, and responsibility**			
3.1	Illustrate awareness of risk assessment and safety observation when dealing with various equipment at various fields.	V2.1	Lab work	Lab work assessment

C. Course Content

No	List of Topics	Contact Hours
1.	**Digestive system:** carbohydrates, lipids, proteins, minerals, water, vitamins, enzymes, structure of digestive system, saliva and its secretion, gastric digestion, mechanism of gastric juice and HCl secretion, intestinal digestion, large intestine Absorption.	**4**
2.	**Excretory system:** Structure, composition of kidney, renal functions, urine formation, homeostasis, control of water reabsorption, regulation of water reabsorption by ADH hormone, mechanism of reabsorption of water and sodium, action of Henle loop, sodium, potassium and calcium regulation, acid base renal regulation and acidic urine formation.	**4**
3.	**Nervous system:** Nerve cell structure, types of nerve cells, myelinated and unmyelinated nerve fibers, different types of receptors as per cellular location.	**Self-learning**
4.	**Respiratory system:** Respiration (External), mechanism of respiration, lung capacity, gas exchange, transport of respiratory gases, regulation of respiration process and control of respiration.	**4**
5.	**Endocrine system:** Mechanism of hormone action, cell surface receptors and second messenger, plasma membrane receptors, pituitary gland, thyroid gland, parathyroid hormones, adrenal glands, cortex hormones, medulla hormones, pancreatic hormones, reproductive hormones, menstrual cycle.	**4**
6.	**Reproductive system:** male and female reproductive systems, their composition, spermatogenesis process, Oogenesis stages, pregnancy, and placenta.	**3**
7.	**Muscular system:** structure of muscle cell, different types of muscles and theories of muscle contraction.	**Self-learning**
8.	**Circulatory system:** composition, blood vessels (veins and arteries), blood circulation, blood composition and its functions, blood cells(RBCs), factors affecting RBCs production, blood hemolysis, Anemia, pernicious anemia, microcytic anemia, polyerythremia, jaundice, WBCs (granulocytes, agranulocytes), sites of WBCs production, regulation of leucopoiesis, functions of WBCs, blood platelets, blood plasma, blood coagulation, mechanism of coagulation, intravascular clotting, clot lysis, prevention of coagulation, abnormalities of coagulation, regulation of blood volume, blood transfusion, A,B,O system, Rh factor.	**3**
Total		22

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	**Theoretical written assignment**	**3**	**5**
2.	**Theoretical quiz**	**4**	**5**
3.	**Theoretical Mid-term exam**	**6**	**10**
4.	**Practical Quiz**	**5**	**5**
5.	**Practical assignment**	**6**	**5**
6.	**Final practical exam**	**11**	**20**
7.	**Final Exam**	**12**	**50**

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	محمد بن صالح الخليفة (2008). الفسيولوجيا العامة. جامعة الملك سعود. النشر العلمي والمطابع Mohamed Bin-Saleh Al-Khalifa (2008). General physiology. King Saud scientific publications
Supportive References	• Guyton and Hall, (2006) Textbook of Medical physiology 11th edition • William O. Reece (2015). Functional Anatomy and Physiology of Domestic Animals. Wiley – Blackwell • Bruce M Koeppen and Bruce A Stanton Berne (2017). Berne & Levy Physiology, Elsevier • Guyton and Hall (2020). Textbook of Physiology, international edition, 14 editions, Elsevier
Electronic Materials	Web Sites, etc. https://www.adinstruments.com/lt/animal-physiology
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
Facilities: **(Classrooms, laboratories, demonstration rooms /labs, exhibition rooms, simulation rooms, etc.)**	**1. Lecture room(s) for groups of 50 students.** **1. Laboratory for group of 25 students.**
Technology equipment **(Projector, smart board, AV, data show, software,etc.)**	**AV, data show, Smart Board.**
Other equipment **(Depending on the nature of the specialty)**	**Light microscopes, glassware, chemicals, consumables. dissection tools.**

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	**Students, Faculty**	**Direct (Questionnaire)**
Effectiveness of student's assessment	**Students, Faculty**	**Direct (Questionnaire)**
Quality of learning resources	**Program Leader**	**Indirect (QA Committee)**
The extent to which CLOs have been achieved	**QA. Committee**	**Indirect (Benchmarking)**
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	Biology Department Board
REFERENCE NO.	BIO2214
DATE	20/9/2022AD

Course coordinator: **Dr. Mohsen Khormi**

Signature: 

Head of Department

Name: **Dr. ABDULLAH YAHYA MASHRAQI**

Signature: