هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission
اعتماد
NCAA
2024
TP-153

Course Specification
(Bachelor)

Course Title:	**Animal Physiology**
Course Code:	**BIOL 111**
Program:	**Biology**
Department:	**Biology Department**
College:	**College of Science**
Institution:	**Majmaah University**
Version:	3rd
Last Revision Date:	**26-12-2023**

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: 3 (2+1)					
Equivalent to ECTS Credit Point: 4.5					
2. Course type					
A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☒ Required		☐ Elective		
3. Level/year at which this course is offered: (2nd level / 1st year)					
4. Course General Description:					
This course introduces students to the complexity of organisms by studying how their different organ systems strive to maintain internal homeostasis in the face of different environmental demands. Some of the topics to be covered include biological control systems (hormones, neurons) and coordinated body functions (circulation, respiration, excretion, digestion).					
5. Pre-requirements for this course (if any):					
BIOL-101					
6. Co-requirements for this course (if any):					
N/A					
7. Course Main Objective(s):					
▪ **Studying the organ, organ system, and organismal levels of structure and function for all organ systems.** ▪ **Interpret the interplay between different organ systems and their responses to environmental change.** ▪ **Analyze the interrelationships of body organ systems, homeostasis, and the complementarity of structure and function as they relate to the integumentary, musculoskeletal, nervous, and endocrine systems.**					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	60	80%
2	E-learning	15	20%
3	Hybrid • Traditional classroom • E-learning	--	--
4	Distance learning	--	--

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	30
2.	**Laboratory/Studio**	30
3.	**Field**	--
4.	**Tutorial**	--
5.	**Others (specify)**	--
Total Contact hours		60

Workload (based on the academic semester)

No	Activity	Workload (in hours)
1.	**Contact Hours**	60
2.	**Self-study hours or Academic learning hours** (Assignment, Quizzes, Reports, Discussions, Library, Research, …)	60
	Total Workload	120 hours
Equivalent to ECTS Credit points		4.5

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	Recognize the relationship between species and their internal (physiological) and external environments.	K1	▪ Lecture Notes ▪ PowerPoint Presentation ▪ Individual and group discussion.	▪ Assignments ▪ Quizzes ▪ Midterm and final exams
2.0	**Skills**			
2.2	Differentiate the various organs of the animals' body and summarizing their functions.	S2	▪ Lecture Notes ▪ PowerPoint Presentation ▪ Individual and group discussion.	▪ Assignments ▪ Quizzes ▪ Midterm and final exams
2.4	Examine the slides in practical part and use perfectly the living specimens.	S4	▪ Practical Notes ▪ PowerPoint Presentation ▪ Laboratory assignments ▪ Individual and group discussion. ▪ Practical works - videos	▪ Practical exams ▪ Lab reports
…				

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
3.0	**Values, autonomy, and responsibility**			
3.1	Communicate and work effectively in groups as well as individually to differentiating the various concepts of animal behaviors.	V1	Students will practice as groups (team work)	Assessment of team assignment presentation and reports.
3.2				

C. Course Content

No	List of Topics	Contact Hours
1.	**Introduction to Physiology:** ▪ Homeostasis. ▪ Negative and positive Feedback System.	2
2.	**Role of Organ Systems of the Human Body in Homeostasis.**	2
3.	**Digestive System:** ▪ Functions of associated organs of the alimentary canal. ▪ Digestion in mouth, stomach small intestine, large intestine.	2
4.	**Cardiovascular System:** ▪ Function of Heart. ▪ Types of blood vessels	2
5.	**Blood circulations (systemic & pulmonary)** ▪ Physiology of circulation. ▪ Function of capillaries (Capillary exchange mechanism).	2
6.	**Blood (Plasma, RBCs, WBCs, and Platelets).** ▪ Components of blood. ▪ Functions of blood. ▪ Functions of components.	2
7.	**Erythrocytes:** ▪ Functions of RBCs count &life span. ▪ Hemoglobin & its function. **Leucocytes:** ▪ Functions of WBCs. ▪ Count & life span. **Platelets:** ▪ Functions of platelets ▪ Total count &life span	2
8.	**Lymphatic System:**	2

9.	**Respiratory System:** ▪ Mechanism of Breathing. ▪ Internal & external Respiration ▪ Control of Respiration. ▪ Chemical regulation of respiration.	2
10.	**Nervous System:** ▪ Organization of Nervous System (structural & function classification). ▪ Types of Nervous Tissue & its functions. ▪ Nerve Impulse generation & Conduction (Action potential). ▪ Reflex Arc.	2
11.	**Central Nervous System:** ▪ Functions of different parts of the brain and spinal cord. ▪ Function of Meninges. ▪ Peripheral Nervous System: ▪ Functions of Peripheral Nervous System ▪ Autonomic Nervous System: ▪ Functions of Sympathetic & Parasympathetic Nervous System.	2
12.	**Endocrine System:** ▪ Definition & Functions of Hormone. ▪ Control of Hormone release. ▪ Glands & their associated hormones.	2
13.	**Muscular System:** ▪ Physiology of Muscle Contraction ▪ Types of Muscle.	2
14.	**Urinary System:** ▪ Main components of the urinary system ▪ Function of kidneys. ▪ **Process of urine formation & composition of urine.** ▪ **Regulation of blood PH.**	2
15.	**Reproductive System.** ▪ Function of reproductive organs ▪ Mechanism of formation of sperm and ova. ▪ Ovarian cycle hormones & their relationship with menstrual Cycle.	2
Total		**30**

Practical content

No	List of Topics	Contact Hours
1.	**Salivary Digestion**	2
2.	▪ **Digestion of Starch by Salivary Amylase**	2
3.	▪ **Optimum Temperature for the Activity of SA**	2

4.	▪ Optimum PH for the Activity of SA	2
5.	▪ Detection of Mucin in the Saliva	2
6.	Blood Analysis:	2
7.	▪ Blood Composition	2
8.	▪ Red Blood Cell Count.	2
9.	▪ White Blood Cell Count	2
10.	▪ Preparation of blood films	2
11.	▪ Staining blood films Blood Typing	2
12.	Urine Analysis	2
13.	▪ Physiological Analysis of Urine	2
14.	▪ Chemical Analysis of Urine	2
15.	▪ Microscopic Analysis of Urine	2
	Total	30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Assignments, quizzes	Week 1-10	10 %
2.	Mid-term Exam 1	Week 5	10 %
3.	Bb electronic exam	Week 9	10 %
4.	Mid-term Exam 2	Week 8-10	10 %
5.	Practical Group projects & essays	Week 12	10 %
6.	Practical exam	Week 15	10 %
7.	Final Exam	Week 16	40 %

*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	• Animal Physiology by Richard W. Hill (2022); Sinauer Associates, Inc. ISBN: 978-1605354712. • Practical Physiology by Marwan A. Ibrahim (2014); Lambert Academic Publishing. ISBN: 978-3-659-52086-0
Supportive References	- Principles of Animal Physiology Christopher D. Moyes (2020); Pearson. ISBN: 978-0321838179

	- Animal Physiology: From Genes to Organisms by Lauralee Sherwood (2012); Brooks Cole. ISBN: 978-0840068651
Electronic Materials	• Saudi Digital Library https://www.sdl.edu.sa/SDLPortal/Publishers.aspx • American Journal of Physiology (www.physiology.org). • The Journal of Physiology (jp.physoc.org). • Physiological Reports (http://onlinelibrary.wiley.com/journal) • PHYSIOLOGICAL REPORTS open access (http://physreports.physiology.org) • http://www.physiology.com
Other Learning Materials	Videos, slides and presentations that are available with the instructor.

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	• The number of seats in classrooms and lab. is suitable and there is no need for extra seats. • The classrooms are provided with smart board and e-podium and laboratories are provided with smart board.
Technology equipment (projector, smart board, software)	The classrooms are provided with smart board and e-podium
Other equipment (depending on the nature of the specialty)	The department needs a computer room containing at least 30 systems for Bb exams and e-learning.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Indirect
Effectiveness of Students assessment	Program Leaders	Indirect
Quality of learning resources	Faculty	Direct
The extent to which CLOs have been achieved	Program Leaders	Direct
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**DEPARTMENT COUNCIL**
REFERENCE NO.	**7**
DATE	**07/10/2024**