



Course Specification

(Bachelor)

Course Title: Vertebrate

Course Code: BIOL_213

Program: Biology

Department: Biology Department

College: College of Science

Institution: Majmaah University

Version: 3rd

Last Revision Date: Ref# 7 10/10/2023



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A. General information about the course:

1. Course Identification

1. Credit hours: (3 (2+1))		Equivalent to ECTs= 4 .5 ECTs		
A. <input type="checkbox"/> University <input type="checkbox"/> College <input checked="" type="checkbox"/> Department <input type="checkbox"/> Track <input type="checkbox"/> Others				
B. <input checked="" type="checkbox"/> Required <input type="checkbox"/> Elective				
3. Level/year at which this course is offered: (3rd level /2nd year)				
4. Course General Description:				
This course related to classification of the different taxonomic groups of vertebrate animals by distinguishing their specific characteristics, internal structure of body systems, physiology, habitat and behaviors in addition to origins evolution diversity.				
5. Pre-requirements for this course (if any):				
BIOL_101				
6. Co-requisites for this course (if any):				
N/A				
7. Course Main Objective(s):				
This course focuses on classification of phylum Vertebrata showing the main characteristic features for each class in addition to the structural pattern of the main body system in veratebrates examples.				

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 <ul style="list-style-type: none"> • Traditional classroom • E-learning 	0	0
4	Distance learning	0	0

3. Contact Hours (based on the academic semester)





No	Activity	Contact Hours
1.	Lectures	30
2.	Laboratory/Studio	30
3.	Field	0
4.	Tutorial	0
5.	Others (specify)	0
Total		60

Workload (based on the academic semester)

No	Activity	Work Load /Hrs
1.	Contact hrs.	60
2.	Self-study (Assignments, quizzes, reports, Discussions, Library, research....)	60
Total Workload		120
Equivalent to credit points ECTs		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			
1.1.2	List the general characteristics of Phylum Vertebrata and its different classes. showing ancestors.	K2	Lecture	Quizzes' Midterm and final exams
2.0	Skills			
2.1.1	Discuss the relation between structure and function of body systems showing the structure of the internal system and adaptation to the external environment	S1	discussion/ Brainstorming	Quizzes' Midterm and final exams
2.4.1	Examine the biological slides/Spotters/Specimen	S4	Practical Sessions	Practical exam/lab report





Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	and perform dissection of the biological samples.			
3.0	Values, autonomy, and responsibility			
3.1.1	Committee toward tasks contributing ideas following scientific ethics using scientific concepts.	V1	Teamwork/ Lab	Assignments, Homework, report
...				

C. Course Content

No	List of Topics	Contact Hours
1.	Unit:1 Vertebrate Taxonomy and Diversity, Taxonomic Classifications Introduction to taxonomy, Levels of Classification, Nomenclature system. Broad classification of Living things: Definition of Chordates, Protochordates, classification, and characteristics. Detailed classification of the animal groups belonged to the class: Amphibians- Birds- Fishes- Mammals- Reptile General and special characteristics	6
2.	Unit:2 Chordates (ancestors - their characteristics – classification) Ancestral Deuterostome evolution starting from: Echinodermata, Cephalochordata, Urochordata, Myxini, Petmyzontida, Chondrichthyes, Actinopterygii, Actinistia, Dipnoi, Amphibia, Reptilia, Mammalia. Characteristics and classification	4
3.	1st mid-Term exam +feedback	2
4.	Unit:3 Fishes: Fish Diversity - Covering major groups: Ancestry and Evolution Cartilaginous Fishes & Acanthodians Superclass Agnatha Class Myxini: Hagfishes Class Chondrichthyes Subclass Elasmobranchii- Sharks- Rays	4





	<p>Subclass Holocephali: Chimeras</p> <p>Superclass Osteichthyes</p> <p>Class Actinopterygii</p> <p>Class Sarcopterygii</p> <p>Structural and Function Adaptations</p> <p>Speed and Energy- Swim Bladder- Respiration- Osmotic Regulation</p> <p>Marine Fishes- Feeding Behavior- Reproduction- Growth</p> <p>Fish Development</p>	
5.	<p>Unit: 4 Ectotherms – Amphibians and Reptiles</p> <p>The 3 Orders of Amphibians: (Urodela, Anura and Apoda)</p> <p>The 3 Largest Orders of modern reptiles: Chelonia (turtles); Squamata (lizards and snakes) Crocodilia (crocodiles& alligators)</p> <p>Adaptations in reference to circulatory system, Respiration, Growth and reproduction</p>	4
6.	2nd mid-term exam +feedback	2
7.	<p>Unit: 5 Birds (ancestors - their characteristics – classification).</p> <p>Origin and Early Evolution, Ancestors, Classification, characteristics, special features, Feathers, Beaks and feet, Skeleton and Muscles, Endothermy, Digestive and excretory system, Respiratory, Circulatory, Nervous and Reproductive system. Incubation and Development, Nest building, Territoriality and Courtship, Migration</p>	4
8.	<p>Unit: 6 Mammals (ancestors - their characteristics – classification).</p> <p>Ancestral and Early Mammals, Therapsids, Characteristics of mammals, Body systems: Circulatory, Respiratory system, Feeding, Teeth, Digestive system, Nervous system, Development, Special features: Flight, Echolocation, Reproduction.</p> <p>Primates: Classification</p> <p>Special characteristics of the three main groups of Class Mammalia</p>	4
Total		30
Practical Content		
No	List of Topics	Contact Hours





1.	Amphiouxus (lateral V.-T.S.in tail-T.S.in trunk)	4
2.	Ascidia-Blanoglosus	2
3.	Petormyzon (lateral V.-T.S.in tail-T.S.in trunk)	4
4.	Dog Fish (lateral V. T.S.in tail-T.S.in trunk)	4
5.	Bolti (Digestive system-Urinogenital System)	4
6.	Toad (Digestive system-Urinogenital System)	4
7.	Lizard (Digestive system-Urinogenital System)	4
8.	Aves (Digestive system)	2
9.	Mammals (Digestive system)	2
Total		30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quiz's, Assignments, Homework	Once every 2 weeks once on as applicable	10%
2.	Mid-term Exam-1	5 th -6 th week	10%
3.	Mid-term Exam-2	9 th -10 th week	10%
4.	Black Board, e-Exam	12 th week	10%
4.	Practical Exam and lab reports	14 th -15 th week	20%
5.	Final Exam	16 th -18 th week	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	Vertebrate Biology (2020): Donald W. Linzey. Johns Hopkins University.
Supportive References	Vertebrate Life (2012): Harvey F. Pough. Pearson
Electronic Materials	<ul style="list-style-type: none"> ▪ http://palaeos.com/vertebrates/references/refs.html ▪ http://www.newworldencyclopedia.org/entry/Vertebrate ▪ https://www2.palomar.edu/anthro/animal/animal_4.htm ▪ https://species.nbnatlas.org/species/NBNSYS0100005954 ▪ https://en.wikipedia.org/wiki/Vertebrate ▪ https://animaldiversity.org/accounts/Vertebrata/ ▪ https://www.youtube.com/watch?v=vcf72k_mLBk





Other Learning Materials	Electronic materials of Lecture notes and PowerPoints available in 'Black board' database.
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2. Required Facilities and Equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Existing facilities are satisfactory
Technology equipment (projector, smart board, software)	Existing facilities are satisfactory
Other equipment (depending on the nature of the specialty)	None

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Direct/ Indirect methods through Questionnaires and %CLOs
Effectiveness of Students assessment	Dep. reviewer/Students	Direct/indirect
Quality of learning resources	Faculty members/students	Indirect methods through Questionnaires
The extent to which CLOs have been achieved	Students	Direct
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	BIOLOGY DEP.
REFERENCE NO.	7
DATE	7/10/2024

