



Academic Course Specification Form

استمارة توصيف المقرر الأكاديمي

القسم الخاص بالطالب Section Concerning the Student

1. Course Code:	BIOLS234	1. رمز المقرر:
2. Course Title	Chordate Zoology	2. اسم المقرر:
3. College:	Science	3. الكلية:
4. Department:	Biology	4. القسم:
5. Academic Program:	Bachelor of Science in biology	5. البرنامج الأكاديمي:
6. Course Credits:	2-2-3	6. عدد الساعات المعتمدة:
7. Course NQF Level:	6	7. مستوى المقرر وفقاً للإطار الوطني للمؤهلات:
8. Notional Hours:	118	8. عدد الساعات الافتراضية:
9. NQF Credits:	12	9. عدد الساعات المعتمدة للمقرر وفقاً للإطار الوطني للمؤهلات:
10. European Credit Transfer System (ECTS) credits	6	10. عدد الساعات للمقرر بالنظام الأوروبي
11. Prerequisite:	BIOLS103	11. المتطلب السابق للمقرر:
12. Lectures Timing & Location:		12. وقت المحاضرة ومكانها:

13. General Mode of Teaching and Learning	Traditional تقليدي	13. النمط العام للتعليم والتعلم:
14. Course Coordinator:		14. منسق المقرر:
15. Course Instructor:		15. مدرّس المقرر:
16. Office Hours and Location:		16. الساعات المكتبية ومكانها:
17. Instructor's Email:		17. البريد الإلكتروني لمدرّس المقرر:
18. Academic Year:		18. السنة الأكاديمية:
19. Semester:		19. الفصل الدراسي:
20. Textbook(s):	20. الكتب الدراسية للمقرر:	
Integrated Principles of Zoology 19th edition by Hickman et al 2024		
21. References:	21. المراجع:	
Vertebrate life – Eight or Nine edition 2009 by Pough, Janis and Heiser Animal diversity by Hikman et al. 2007 The vertebrate body by Romer and Parsons- see library for update Anatomy of the chordates by Weichert- see library The life of vertebrates by Young 1991 Color atlas of vertebrate anatomy by King and Custance- see library Atlas of Human Histology by Difior (to be updated every year) Lab reference: (ref: Colour Atals of Vertebrate Anatomy by King and Custance, 1982) Lab handouts will be provided		
1. Other Learning Resources Used (e.g. e-learning, field visits, periodicals, software, etc.):	22. مصادر التعلم الأخرى (مثال: التعلم الإلكتروني، زيارات ميدانية، دوريات، برمجيات، إلخ....)	
Lecture notes Laboratory manual Audio-video facility Access online facilities and Youtube Digital Zoology on line by Jon Houseman version 2.		
2. Course Description (as published in the College Catalogue):	23. توصيف المقرر (حسب ما ورد في دليل الكلية):	
Classification and biology of chordates: Protochordates; Hemichordates; Urochordates and Vertebrates.		
3. Course Intended Learning Outcomes (3 to 5 CILOs):	24. مخرجات التعلم للمقرر (CILOs) (3 إلى 5 مخرجات تعليمية):	

1. Classify the major groups of the phylum Chordates to relate chordates to another animal phylogeny			
2. Describe the main shared features of the chordates.			
3. Differentiate between vertebrate chordates and non-vertebrate chordates			
4. Analyze the biology of chordates in terms of morphological, histological, physiological, and behavioral characteristics of selected animals belonging to each chordate subphylum.			
5. Investigate the evolutionary relationship of different tissues and organ systems and animal dissection techniques.			
4. Course Assessment Percentages (as per Regulations of Study and Examination at the University of Bahrain):		4) أساليب التقييم ونسبها المئوية (بحسب نظام الدراسة والامتحانات في جامعة البحرين):	
Assessment التقييم	Type النوع	Percentage النسبة	Assessment Date تاريخ التقييم
Midterm-I	Individual فردى	15%	
Midterm-II	Individual فردى	10%	
Lab exam- I	Individual فردى	15%	
Lab exam-II	Individual فردى	10%	
Theory Quiz	Individual فردى	5%	
Lab Quiz	Individual فردى	5%	
Final	Individual فردى	40%	
Total	100%		
5. Description of Topics Covered		5) وصف الموضوعات التي ينبغي تناولها:	
Topic Title (e.g. chapter/experiment title) الموضوع		Description التفصيل	
1-Protochordates: Introduction: Hemichordates, Urochordates and Cephalochordates		Basic structures of chordates and vertebrates are explained and the relationship of vertebrates to other members of the animal Kingdom are discussed. The different systems are described in reference to vertebrates as functional animals. The need to understand fundamentals of vertebrate anatomy, physiology and development is emphasized in order to appreciate the changes that have occurred during evolution.	

2- Chordates	Classification and main features
3-Vertebrate diversity, function and evolution: The diversity, classification and evolution of vertebrates	In order to tell the story of vertebrates: where they originated, how they evolved what they do and how they work, we must introduce some basic information including what the different kinds of chordates are called, how they are classified and what the world was like long time ago. Phylogenetic relationships of extant groups are summarized showing the students different examples of cladograms.
4-Vertebrate relationships and basic structure: vertebrates in relations to other animals	The position of the subphyla: Hemichordates, Urochordates and Cephalochordates are explained within the most recent phylogeny of the animal kingdom to show the student how these chordates are related to Invertebrates and to vertebrates. Basic vertebrate structure is explained and compared to other subphyla including the tissue types, energy acquisition and support of metabolism.
5-Jawless-vertebrates: Hagfish and Lampreys The basic gnathostome design	The earliest vertebrates represent an important advance over the non-vertebrate chordate. The origin of bones and other mineralized tissues. The structural characteristics of Hagfishes and Lampreys and the Gnathostome features are explained. The origin of fins, gills, jaws and the transition from jawless to jawed vertebrates are discussed.
6-Non-amniotic vertebrates: Chondroichthyes: Cartilaginous fishes: Dogfish	Compare jawless (Hagfishes and Lampreys) to jawed vertebrates: Anatomy of Dogfish/ Shark to show different system detail
7-Non-amniotic vertebrates: Osteoichthyes: Living in Water: Bony fishes	Main features and Anatomy of bony fishes, Dominating life in water
8-: Living in Water: Lobe-Finned Fishes	Are they the ancestor of Tetrapods?
9-Non-amniotic vertebrates: Amphibians : Living in water	Life in water poses challenges for vertebrates but offers many opportunities. Aquatic habitats can be very complex. The evolution of vertebrates that are adaptive to their ever

			changing habitats are discussed. How they obtain oxygen, buoyancy and exchange of water and ions with their aquatic environment. Early tetrapods and Modern Amphibians	
10-Living on Land: Amniotic vertebrates Nonavian Reptiles			The demands of terrestrial life are different from those of an aquatic environment because water and air have different physical properties. The gravity and the supporting system, air is easier to breath, and many other differences leading to differences in the function of systems such as sensory systems, feeding, circulation etc...	
11-Amniotic vertebrates: Avian specialization (Birds)			Flight is a major characteristic of birds. The mechanical requirements of flight shape many aspects of the anatomy of birds. Many of the complex social behavior of birds are associated with reproduction.	
12-Amniotic vertebrates: mammalian specializations (Mammals)			Mammals have more complex social systems than any other kinds of vertebrates. Anatomical and physiological features of mammals are discussed and related to their success.	
6. Weekly Schedule			6) الجدول الأسبوعي	
Week الأسبوع	Date التاريخ	Topics Covered الموضوعات المتناولة	CILOs مخرجات التعلم للمقرر (CILOs)	Teaching/Assessment Mode and Method منهجية ونمط التدريس/التقييم
1		Protochordates: Introduction: Hemichordates, Urochordates and Cephalochordates Lab	1,2 and 3	Traditional تقليدي
2		Chordates Lab	1,2 and 3	Traditional تقليدي
3		Vertebrate diversity, function and evolution: The diversity, classification and evolution of vertebrates Lab	1,2, 3 and 4	Traditional تقليدي
4		Vertebrate relationships and	1,2, 3 and 4	Traditional تقليدي

		basic structure: vertebrates in relations to other animals		
5		Jawless-vertebrates: Hagfish and Lampreys The basic gnathostome design Lab	1,2, 3 and 4	Traditional تقليدي
6		Non-amniotic vertebrates: Chondroicthyes: Cartilaginous fishes: Dogfish Lab	1,2, 3, 4 and 5	Traditional تقليدي
7		Non-amniotic vertebrates: Osteoicthyes: Living in Water: Bony Fishes Lab	1,2, 3, 4 and 5	Traditional تقليدي
8		Living in Water: Lobe-Finned Fishes	1,2, 3,4 and 5	Traditional تقليدي
9		Non-amniotic vertebrates: Amphibians : Living in water	1,2, 3,4 and 5	Traditional تقليدي
10		Non-amniotic vertebrates: Amphibians : Living in water Lab	1,2, 3,4 and 5	Traditional تقليدي
11		Living on Land: Amniotic vertebrates Nonavian Reptiles Lab	1,2, 3,4 and 5	Traditional تقليدي
12		Living on Land: Amniotic vertebrates Nonavian Reptiles	1,2, 3,4 and 5	Traditional تقليدي
13		Amniotic vertebrates: Avian specialization (Birds) Lab	1,2, 3,4 and 5	Traditional تقليدي

14		Amniotic vertebrates: Avian specialization	1,2, 3,4 and 5	تقليدي Traditional
15		Amniotic vertebrates: mammalian specializations (Mammals) Lab	1,2, 3,4 and 5	تقليدي Traditional
16				
7. Academic Integrity Statement			7) بيان النزاهة الأكاديمية	
Students are to observe the highest level of honesty and academic ethics in pursuit of their academic goals as per UOB Regulations of Student Conduct and Academic Integrity, Anti-plagiarism Policies , and Students' Rights and Responsibilities Handbook . The consequences for cheating, plagiarism, unauthorized collaboration, and other forms of academic dishonesty can be very serious and will be dealt with as per the aforementioned policies and regulations.			يتعين على الطلبة الالتزام بأعلى مستويات الصدق والأمانة والأخلاق الأكاديمية في سعيهم لتحقيق أهدافهم الأكاديمية وفقاً للوائح سلوك الطلاب والنزاهة الأكاديمية، سياسات مكافحة الانتحال ، ودليل حقوق الطلبة وواجباتهم ، المعمول بها في جامعة البحرين. يمكن لعواقب الغش والسرقة الأدبية والتعاون غير المصرح به وغيرها من أشكال عدم الأمانة الأكاديمية أن تكون خطيرة للغاية وسيتم التعامل معها وفقاً للسياسات واللوائح المذكورة آنفاً.	
8. Attendance and Absence Regulations			8) نظام الحضور والغياب	
Students are required to adhere to regular attendance for class lectures and practical sessions, as determined by the nature of the course, as per Article (33) of Regulations of Study and Examination at the University of Bahrain .			يجب على الطلبة الالتزام بالحضور المنتظم للمحاضرات الصفية والعملية، حسبما تحدده طبيعة المقرر الدراسي، ووفقاً للمادة (33) من نظام الدراسة والامتحانات في جامعة البحرين .	