Course Specifications

Course Title:	**Chordata**
Course Code:	**323BIO-2**
Program:	**Biology**
Department:	**Biology**
College:	**College of Arts and Sciences**
Institution:	**Najran University**

Table of Contents

A. Course Identification

1. Credit hours:3
2. Course type **a.** University ☐ College ☐ Department ☒ Others ☐ **b.** Required ☒ Elective ☐
3. Level/year at which this course is offered: VII/ 4th year
4. Pre-requisites for this course (if any)**: 323BIO-2**
5. Co-requisites for this course (if any)**: non**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	30	200%
2	**Blended**	-	
3	**E-learning**	-	
4	**Correspondence**	-	
5	**Other**	-	

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture**	30
2	**Laboratory/Studio**	30
3	**Tutorial**	-
4	**Others** (specify) E-learning	-
	Total	60
Other Learning Hours*		
1	**Study**	17
2	**Assignments**	3
3	**Library**	5
4	**Projects/Research Essays/Theses**	5
5	**Others** (specify)**: Office hours**	5
	Total	35

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

Chordates is a course, which introduces the students to definition, theories of knowledge, and skills about various chordate classes regarding their biology, morphology, and classification. Recognizes economical and biological importance of vertebrates. Gain some knowledge concerning protochordates and their affinity with vertebrates. Illustrate the variations among different systems in chordate animals and phylogenetic relationships among them. The course is also vital for the study of comparative anatomy and future teaching and researches purposes after graduation.

2. Course Main Objective

1. Recognize the basic concepts related to the basic structure and functions of the different chordate body organ systems
2. Understand the variations among different systems in chordate animals.
3. Understand means of adaptation of different chordate animals with their habitats.
4. Apply practical skills represented in practical sessions.
5. Apply comparative anatomy in current scientific methods/literature.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge:**	
1.1	Identify the evolutionary history of chordates.	
1.2	Know the characteristics of the major chordate classes.	
1.3	Recognize the basic concepts, structure and functions of the different chordate body organ systems	
2	**Skills :**	
2.1	Describe the basics of systematics and the use of anatomy and morphology in determining evolutionary relationships.	
2.2	Analyze similarities and differences across chordate groups using a systems based approach.	
2.3	Apply comparative anatomy in current scientific methods/literature	
3	**Competence:**	
3.1	Work independently and as a team work	
3.2	Manage recourses, time and other members of the group	
3.3	Communicate knowledge with others	

C. Course Content: Theoritical

No	List of Topics	Contact Hours
1	**Introduction and basic classification of chordates** - General characters of chordates	2
2	**Subphylum : Hemichordates** : e.g. Acorn worm. Balanoglossus. - Different body systems	2
3	**Subphylum : Urochordates** : e.g. Sea squirt, Ascidia.	2

	- Different body systems	
4	Subphylum : Cephalochordates : e.g. Lancelet, Branchiostoma. - Different body systems	2
5	Class: Chondrichthyes:e.g. Shark Exo- & Endo-skeletal, respiratory, digestive, circulatory, urinogenital, nervous systems and sense organs	2
6	Class : Osteichthyes: e.g. Bolti Exo- & Endo-Skeletal, respiratory, digestive, circulatory, urinogenital, nervous systems and sense organs	2
7	Class: Amphibian -Classification and pentadactyle structure -Anamniota and Amniota	2
8	Class: Reptilian: e.g. Lizard -Exo- & Endo-Skeletal, muscular, respiratory, digestive, circulatory, urinogenital, nervous systems and sense organs	4
9	Class : Aves : e.g. Domestic Pigeon -Exo- & Endo-Skeletal, respiratory, digestive, circulatory, urinogenital, nervous systems and sense organs	6
10	Class: Mammalia: e.g. Rabbit - Skeletal (skull, vertebrae, turbinals, teeth ...etc) muscular, respiratory, digestive, circulator y, urinogenital, nervous systems and sense organs	6
Total		30

Practical:(Topics to be covered)

Order	Topics List	Weeks	Credits
1	**Amphioxus**: External features - sections (pharyngeal – intestinal – tail) regions	**1**	**2**
2	**Lamprey**: External features, sections (pharyngeal – intestinal – tail) regions	**1**	**2**
3	**Dogfish:** External features, anatomy, internal systems, sections (pharyngeal – trunk – tail) regions. Placoid scales.	**2**	**4**
3	**Bolti:** External features, anatomy, internal systems, sections (pharyngeal – trunk – tail)scales.	**2**	**4**
4	**Frog:** External features, anatomy, internal systems, skin.	**2**	**4**
5	**Lizard:** External features, anatomy, systems.	**2**	**4**
6	The domestic pigeon: External features, anatomy, internal systems, feathers.	**2**	**4**
7	**Rat:** Externals features, anatomy, internal systems.	**2**	**4**
	Revision	**1**	**2**
Number of Weeks /and Units Per Semester		**15**	**30**

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge:**		

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.1	Identify the evolutionary history of chordates.	**Lectures**	Final and semester exams
1.2	Describe the defining characteristics of the major chordate classes.	**Lectures**	Final and semester exams
1.3	Recognize the basic concepts, structure and functions of the different chordate body organ systems	**Lectures**	Final and semester exams
2.0	**Skills :**		
2.1	Understand the basics of systematics and the use of anatomy and morphology in determining evolutionary relationships.	Student negotiations	Class room activity
2.2	Analyze similarities and differences across chordate groups using a systems based approach.	Student negotiations	Class room activity
2.3	Apply comparative anatomy in current scientific methods/literature	Student negotiations	Class room activity
3.0	**Competence:**		
3.1	Work independently and as a team work	Student negotiations	Class room activity
3.2	Manage recourses, time and other members of the group	Student negotiations	Class room activity
3.3	Communicate knowledge with others	Student negotiations	Class room activity

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Theoretical First Exam	7	10%
2	Practical First Exam	7	5%
3	Theoretical Second Exam	12	10%
4	Practical Second Exam	12	5%
5	Practical final Exam	12	10%
6	Assays , oral presentations, blackboard activity	continuous	10%
٧	Theoretical Final Exam	16	50%

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

- 10 hours per week as office hours
- Academic advisor 10 hours per week

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	- Jordan E.L., Verma P.S., 2010. Chordate Zoology. Published by S. Chand & Company Ltd., A.J. Marshall, 1995. Textbook of zoolog y, Vertebrates. (The McMillan Press Ltd., UK). Gurdarshan Singh & H. Bhaskar, 2002. Advanced Chordate Zoology. Campus Books,
Essential References Materials	Harvey Eugene Lehman. 1983. Chordate development: A practical textbook with atlases and techniques for experimental and descriptive embryology. Harvey Eugene Lehman
Electronic Materials	Websites
Other Learning materials	Videos, films related to the course

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) 40 seats/ class room/ 20 seats/lab Computer access with data show and internet
Technology Resources (AV, data show, Smart Board, software,	Data show, Overhead projector
Other Resources	Models; Microscopes

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Course evaluation	Student	direct
Student-faculty meeting	Faculty, Program Leaders	indirect
Departmental council discussions	Staff members	indirect
Discussion with the group of faculty teaching the same course	Peer Reviewer	indirect
Periodical departmental revisions of each method of teaching	Peer Reviewer	indirect

H. Specification Approval Data

Council / Committee	
Reference No.	
Date	