



Course Title: ANIMAL SCIENCEES – II

Course Code: LS 111

Credit Units: 04

L	T	P/ S	SW/F W	TOTAL CREDIT UNITS
3	0	2	0	04

Course Objectives:

Theory: The objective of this course is to provide the conceptual knowledge about Chordates.

Practical: To train students in understanding morphology and anatomy of chordates.

Pre-requisites: Basic knowledge of Life Sciences

Student Learning Outcomes:

The students will be able to:

Create understanding of various types of Chordates

classify different types of Chordates

describe basic and applied importance of Chordates

develop understanding for economic value of Chordates

demonstrate laboratory practices and skills with regard to structure of Chordates

Course Contents/Syllabus- Theory:

	Weightage (%)
Module I	20
Origin and features of Chordates and Vertebrates. Salient features and outline classification of Phylum Chordata upto order with suitable examples. General Characters and affinities of Hemichordata, Cephalochordata & Urochordata.	

Module II	25
Pisces: Salient features of class Pisces. Respiration, Osmoregulation, Locomotory adaptations, Fish scales. Induced breeding and seed production of economically important fishes.	
Module III	10
Amphibia: Salient Features of Class Amphibia. Respiration, Aestivation and Hibernation.	
Module IV	10
Reptilia: Salient features of Class Reptilia. Poisonous and non- poisonous snakes, Poison apparatus. Snake venom: Milking and its commercial applications.	
Module V	10
Aves: Salient features of Class Aves. Flight adaptations, aerodynamics of flight and migration in birds.	
Module VI	
Mammalia: Salient features of Prototheria, Metatheria and Eutheria. Rabbit: anatomy and physiology of vital body organs like heart, lungs, kidney and sensory organs like skin, eye and taste bud.	25

Pedagogy for Course Delivery:

Lectures: 39
 Tutorial: 0
 Quiz: 1
 Class Test: 2
 Home assignment: 3
 Total: 45

Lab/ Practical details, if applicable:

Tutorial: 02
 Practical: 26
 Class test: 02
 Total: 30

List of Experiments: (NEW SYLLABUS)

1. Introduction to laboratory techniques used In animal science lab.
2. Fish - study of digestive system.
3. Breathing organs of fish
4. Variations in the body form and fins in fishes.

5. Study of different types of scales in fishes, permanent preparations of scales.
6. Introduction to general laboratory techniques.
7. Study of *Rana tigrina*, physiological systems through model.
8. Hyoid apparatus of home lizard.
9. Development of chick
10. Mice: Arterial system and reproductive system through model.

1) Assessment/ Examination Scheme:

Theory L/T (%)	Lab/Practical/Studio (%)	End Term Examination
75	25	70

Theory Assessment (L&T):

Continuous Assessment/Internal Assessment						End Term Examination
Components (Drop down)	Quiz	Class Test 2	Home Assignment	Presentation/ Seminar	Attendance	
Weightage (%)	5	10	10	0	5	70

Lab/ Practical/ Studio Assessment:

	Continuous Assessment/Internal Assessment				End Term Examination			
Components (Drop down)	Performance	Lab record	viva	Attendance	Lab record	Performance	Viva	Total
Weightage (%)	10	10	5	5	10	30	30	100


Text & References:

- Jordan E.L. and P.S. Verma 1995. Chordata Zoology and Elements of Animal Physiology. S. Chand and Co., New Delhi.
- Kotpal R.L. 1992. Vertebrata, Rastogi Publications, Meerut.
- Nigam.H.C. 1983. Zoology of Chordates, Vishal publications, Jalandhar.

- . Waterman, Allyn J. et al.1971, Chordate Structure and functions. Mac.Millan and Co., New York
- Practical Zoology Vertebrates – Dr. S. S. Lal, Rastogi Publication, Meerut.
- A manual of Practical Zoology Vertebrates – P. S. Verma

OTHER

- Research Papers
- Case studies

Theory: The objective of this course is to provide the conceptual knowledge about Chordates	
2	Practical: To train students in understanding morphology and anatomy of chordates