



बिरसा मुंडा ट्रायबल युनिवर्सिटी Birsa Munda Tribal University

राजपिपला, जि. नर्मदा Rajpipla, Dist. Narmada
Established by Tribal Development Department, Govt. of Gujarat

School of Science

B.Sc. (Chemistry) Programme

Subject Code & Name: - BS02MICHE1 Basic Concepts of Zoology-II

Teaching and Evaluation Scheme:

Teaching Scheme				Examination Scheme			
Credits				Component Weightage			
				CCE		SEE	
L	T	P	Total	TH	PWE	TH	PWE
3	-	1	4	37.5 %	12.5 %	37.5 %	12.5 %

Programme Name	B.Sc. (Chemistry)
Semester	II
Course Code	BS02MICHE1
Course Title	Basic Concepts of Zoology-II
Course Content Type (Th./Pr.)	Theory & Practical
Course Credit	3+1
Sessions+ Lab. Per Week	3+2
Total Teaching/Lab. Hours	45 Theory Hours + 30 Practical Hours
* 2 Laboratory = 1 Session	

Learning Objectives

The student develop an understanding of taxonomy of chordates from Hemichordata to Mammalia, and understands the complex interactions of different living organisms.

Prerequisites (if any)

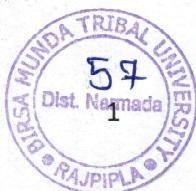
Student must know about different strata and hierarchy of taxonomy.

Student must aware about specific terms used for animal cell biology and genetics.

Learning Outcomes

On the Completion of this course, students will able to:

1. Students will able to learn about the taxonomy and diversity of different classes of chordate animals.
2. Students will learn about structure and functions of animal cell and cell organelles.
3. Students will learn about basic concepts of Non- Mendelian inheritance.





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Detailed Contents		
UNIT	TOPIC/SUB-TOPIC	TEACHING HOURS
I	General characters of chordates with examples: 1. Difference between Non-chordates and Chordates 2. General characters of Hemichordata, Protochordata, Cyclostomata, Pisces, Amphibia, Reptilia, Aves and Mammalia. 3. Suitable examples (as per Practical Syllabus)	15
II	Basic Cell Biology: Cell organelles and Chromosomes <ul style="list-style-type: none">• Ultra-structure of Plasma membrane (different models)• Golgi body• Lysosome• Centriole/Basal bodies• Cilia/Flagella• Cytoskeleton.• Structure and types of Chromosome based on position of centromere.	15
III	Genetics: Non-mendelian inheritance 1. Epistasis or Non-allelic Gene interactions. <ul style="list-style-type: none">• Supplementary (recessive) Genes – Coat color in mice (9:3:4)• Complementary (double recessive) Genes – Flower color in <i>Lathyrus odoratus</i> (Sweet pea plants) (9:7). 2. Sex linked Inheritance: <ul style="list-style-type: none">• Color Blindness and Eye color in Drosophila. 3. Y-linked Holandric genes (Baldness in men)	15





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Unit – IV Practical(s) (if any)	30 Hours
1. Study of general characters of Hemichordata and examples using laboratory slides, charts and specimens; Balanoglossus.	
2. Study of general characters of Protochordata – Urochordata and Cephalochordata examples using laboratory slides, charts and specimens; Ascidian, Herdmania, Salpa and Amphioxus.	
3. Study of general characters Cyclostomata and examples using laboratory slides, charts and specimens; Lamprey (Petromyzon)	
4. Study of general characters of Pisces and examples using laboratory slides, charts and specimens; Sting ray fish, Electric ray fish, Rohu, Catla, Sea Horse (Hippocampus), Eel (Anguilla).	
5. Study of general characters of Amphibia and examples using laboratory slides, charts and specimens; Ichthyophis, Salamander, Hyla.	
6. Study of general characters of Reptilia and examples using laboratory slides, charts and specimens; Turtle, Common House Lizard, Horned Toad, Chamaeleon, Rat snake and Sea Snake.	
7. Study of general characters of Aves and examples using laboratory slides, charts and specimens; Stork, Pelican, Goose, Kite, Peacock, Pigeon, Cuckoo, Parakeet, Kingfisher, Crow, Crane and Red-wattled Lapwing.	
8. Study of general characters of Mammalia and examples using laboratory slides, charts and specimens; Hedge Hog, Flying fox, Blue Whale, Elephant, Dugong, Squirell, Indian Hare, Scaly anteater.	
9. Study of Cytology :	
(i) Plasma membrane	
(ii) Golgi body	
(iii) Lysosomes	
(iv) Centriole/Basal bodies	
(v) Cilia/Flagella	
(vi) Cytoskeleton	
10. Study of Genetics:	
(i) Structure of chromosome	
(ii) Recessive Epistasis (9:3:4)	
(iii) Double recessive Epistasis (9:7)	
(iv) X-linked- color blindness	
(v) Y-linked- Holandric genes	

L:: Lecture, **T::** Tutorial , **P::**Practical

CCE:: Continuous and Comprehensive Evaluation

(CCE Theory includes Mid Semester Examination, Assignment, MCQ quizzes, Seminar, Reflective notes, class participation, case analysis and presentation, slip tests (announced/surprised), attendance etc. or any combination of these)

PWE:: Practical Work Examination

(PWE includes Laboratory practical work, project work, viva simulation exercise work etc.)

SEE:: Semester End Evaluation

