



बिरसा मुंडा ट्रायबल युनिवर्सिटी Birsā Munda Tribal University

राजपिपला, जि० नर्मदा Rajpipla, Dist. Narmda

Established by Tribal Development Department, Govt. of Gujarat

School of Science B.Sc. (Zoology) Programme

Subject Code & Name: BS04MJZOO3 Animal Physiology and Histology

Teaching and Evaluation Scheme:

Teaching Scheme				Examination Scheme			
Credits				Component Weightage (%)			
				CCE		SEE	
L	T	P	Total	TH	PWE	TH	PWE
3	-	1	4	35	15	35	15

Programme Name	B.Sc. Zoology
Semester	IV
Course Code	BS04MJZOO3
Course Title	Animal Physiology and Histology
Course Content Type (Th./Pr.)	Theory + Practical
Course Credit	4
Sessions + Lab. Per Week	3 + 2
Total Teaching/Lab. Hours	45 Theory Hours + 30 Practical Hours
* 2 Laboratory = 1 Session	

Learning Objectives

1. To provide an understanding of the fundamental principles of animal physiology
2. To provide experience in researching, discussing, and answering questions about animal physiology.
3. To provide practical experience in investigating physiological questions, and collecting, analyzing, interpreting, and reporting experimental data.
4. To understand the basic histology of different tissues.

Prerequisites (if any)

- Student must know about the basic structure and functions of body systems.
- Student must aware about specific terms used for animal organ and organ systems.

Learning Outcomes

On the Completion of this course, students will able:

1. To understand the basic physiological concepts of Excretory system.
2. To understand the basic physiological concepts of Central Nervous system □
3. To understanding tissue structures and functions, identifying normal and abnormal tissue features, and applying histological techniques
4. Students should be able to use microscopes, prepare and stain tissues, and correlate histological findings with clinical applications.



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Detailed Contents		
UNIT	TOPIC/SUB-TOPIC	TEACHING HOURS
I	Anatomy and Physiology of Urinary System (Excretory System): <ul style="list-style-type: none">• Introduction to Urinary System.• Anatomy and Histology of Kidney: Overview of kidney functions, External anatomy of the kidney, Internal Anatomy of the kidney, Blood supply of the kidney.• The Nephron: Parts of Nephron, Histology of the nephron and Collecting Duct.• Renal Physiology: Glomerular filtrations, The filtration membrane, Net Filtration Pressure, Tubular Secretion, Counter Current Mechanism and Micturition.• Constituents of Normal and Abnormal Urine.	15
II	Nervous System: <ul style="list-style-type: none">• Structure and types of Neurons and Nerve fibres.• Conduction of Nerve Impulses.• Central nervous System- Brain and spinal cord.• Autonomous Nervous System- sympathetic and parasympathetic.• Disorders: Catalepsy, Alzheimer's, Epilepsy, Meningitis	15
III	Human Histology: <ul style="list-style-type: none">• Introduction of Histology• Introduction of types of Tissues• Histology of Human Tongue• Histology of Human Stomach• Histology of Human Intestine• Histology of Human Liver• Histology of Human Pancreas• Histology of Human Lungs• Histology of Human Bone• Histology of Human Cartilage	15





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Practical (s)

1. To Study Structure of Nephron. (chart/multimedia)
2. To Study Counter Current Mechanism.
3. Biochemical test for normal constituents of Urine.
4. Biochemical test for abnormal constituents of Urine
5. To study the Structure of neurons (chart/multimedia)
6. To study structure of Brain (chart/multimedia)
7. To Study Transmission of Nerve Impulses.
8. Study of types of tissues with the help of permanent slides or chart or multimedia
9. To study Histology of Tongue, Stomach, Intestine, Liver, Pancreas, Lungs, Bone and Cartilage with the help of permanent slides or chart or multimedia.

Reference Book(s)

1. Principles of Anatomy and Physiology, Tortora and Anagnostakos
2. Animal Physiology and Related Biochemistry, H. R. Singh & Shobhan Lal Naginchand
3. Textbook of Animal Physiology, A. K. Berry, Emkay Pub., New Delhi
4. Animal Physiology by N. Arumugam and A. Mariakuttikan Saras Publication
5. Animal Physiology and Biochemistry by Dulsy Fatima, L. M. Narayanan, Saras Publication
6. Animal physiology by P.S. Verma, B.S. Tyagi, et al.
7. Guyton & Hall Textbook of Medical Physiology Vaz
8. Practical Zoology Invertebrate by S. S. Lal, Rastogi Publications
9. Practical Physiology by Chandrasekar

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

