



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: - BS04MIZOO3 Applied Zoology

Teaching and Evaluation Scheme:

Teaching Scheme				Examination Scheme			
Credits				Component Weightage (%)			
				CCE		SEE	
L	T	P	Total	TH	PWE	TH	PWE
3	0	1	4	35	15	35	15

Programme Name	B.Sc. (Zoology)
Semester	IV
Course Code	BS04MIZOO3
Course Title	Applied Zoology
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

Students will able to study

1. Describe the role of various animal species in agriculture, medicine and industry.
2. Apply zoological knowledge in areas like pest control, aquaculture and animal husbandry.
3. Applied zoological knowledge and techniques to improve human life, enhance biodiversity conservation and promote sustainable management of animal resources
4. Understanding the causes and prevention of animal diseases as a learning tool and the impact of animal health on human health

Prerequisites (if any)

Learning Outcomes

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

1. Students understand the biology of parasites and epidemiology of parasitic diseases in human and animals, as well as the methods used for parasite control.





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2. Students study the different types of agricultural pests and their control methods, including biological and chemical pest control.
3. Develop problem-solving abilities in applied fields like pest management or animal husbandry.
4. Applied zoology learning outcomes focus on understanding the principles of animal biology and their practical applications, including areas like conservation, animal husbandry and research

Detailed Contents

UNIT	TOPIC/SUB-TOPIC	TEACHING HOURS
I	Introduction of Animal Relationship: <ul style="list-style-type: none">• Symbiosis• Mutualism• Commensalism• Parasitism• Predation• Competition• Host• Zoonosis• Intermediate Host• Definitive Host Epidemiology of Diseases <ul style="list-style-type: none">• Transmission, prevention and control of diseases: Tuberculosis, Typhoid• Life history and pathogenicity: <i>Giardia</i> and <i>Leishmania</i>.	15
II	Parasitic Helminthes: <ul style="list-style-type: none">• Life History and pathogenicity: <i>Wuchereria bancrofti</i> and <i>Dracunculus medinensis</i>. Insects of Medical Importance: <ul style="list-style-type: none">• Medical importance and control: <i>Pediculus humanus corporis</i>, <i>Culex</i>, <i>Anopheles</i>, <i>Aedes</i>, <i>Xenopsylla cheopis</i>. Household Insects: Cockroach, House flies, Mosquitoes.	15





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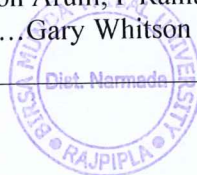
II	<p>Insect Pests of crops: Life history and prevention</p> <ul style="list-style-type: none">• Pests of Sugarcane: Shoot Borer and White flies.• Pests of Paddy: Whorl maggot and Thrips.• Pests of Fruits: Rhizome weevil and Mango stem borer• Pests of Vegetables: Potato tuber moth and mealybug <p>Animal tissue Culture:</p> <ul style="list-style-type: none">• Basics of Tissue Culture• Culture environment• Factors affecting Tissue Culture• Techniques for Animal Tissue Culture <p>Radiation Biology:</p> <ul style="list-style-type: none">• Law of Radio sensitivity• Effects of radiation on Biomolecules, Cells, Cell organelles, various organ and systems.• Radiation and Cancer• Radioactive agents	15
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Practical

1. To study Animal Relationship.
2. To study Life history of *Entamoeba histolytica*.
3. To study Life history of *Trypanosoma gambiense*.
4. To study Household Insects: Cockroach, House flies, Mosquitoes.
5. To study Insect Pests of crops.
6. To study Animal Tissue Culture by chart.
7. To study radioactive agents by chart or multimedia

Reference Books

1. Economic Zoology..... Shukla and Upadhyay
2. Saras Publication Economic Zoology.....N. Arumugam
3. Economical Zoology..... Dr. Shivanand M. Gotyal
4. Nirav College Zoology 101..... Mihir B. Suthar and Haresh G. Patel
5. Venkitaraman : Economic Zoology (Sudarshana Publishers)
6. Economic Zoology, Sarkar, kundu & Chaki, New Central Book Agency(P) Ltd. New Delhi
7. मत्स्यव्यवसायविवेक, प्रा. निरंजनदिखाया ., प्रथमआवृत्ति १९८०, गजु रातग्रंथ निर्माणार्थ, गुजरातराज्य
8. Biological Radiation Effects.....By Jürgen Kiefer · 1990
9. Animal Tissue Culture.....A Wilson Aruni, P Ramadass · 2019
10. Concepts in Radiation Cell Biology.....Gary Whitson · 2012





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Web Resources

Required Software(s) (if any)

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

