



# बिरसा मुंडा ट्रायबल युनिवर्सिटी Birsa 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 & Subject Name: BS04SEZOO2: Lab Testing & Quality Assurance**

### Teaching and Evaluation Scheme:

Teaching Scheme				Examination Scheme			
Credits				Component Weightage (%)			
				CCE		SEE	
L	T	P	Total	TH	PWE	TH	PWE
1	-	1	2	25	-	50	25

Programme Name	B.Sc. Zoology
Semester	IV
Course Code	BS04SEZOO2
Course Title	Lab Testing & Quality Assurance
Course Content Type (Th./Pr.)	Theory/Practical
Course Credit	2
Sessions+ Lab. Per Week	1+2*
Total Teaching/Lab. Hours	30 Hours
* 2 Laboratory = 1 Session	

### Learning Objectives

- To introduce the concept of quality check and quality control in chemical industries.

### Learning Outcomes

By the end of the course, the students will be able to:

- Describe role of quality control chemist
- Discuss and demonstrate analytical and separation techniques
- Carry out sample preparation
- Illustrate fundamentals of quality check
- Describe and use safety procedures.







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### Detailed Contents

UNIT	TOPIC/SUB-TOPIC	TEACHING HOURS
I	<b>Sample Preparation:</b> <ul style="list-style-type: none"><li>Basics of sample preparation, preservation and storage, standards and guidelines for sample handling good storage practices</li></ul> <b>Basics of Modern Analytical methods :</b> <ul style="list-style-type: none"><li>Electro analytical methods, Spectroscopic methods, Chromatographic techniques</li></ul> <b>Personal and fire safety:</b> <ul style="list-style-type: none"><li>Various features concerning safe laboratory work. The code of practice in a laboratory and personal protective devices. A brief discussion on the disposal of waste materials.</li><li>Different causes of fires, classification of fires, types of fire extinguishers and their usage.</li></ul>	15

### Text Book(s)

1. Skoog D.A., West D. M., Holler, F. J., Crouch S. R., Fundamentals of Analytical Chemistry 9<sup>th</sup> edition, Cengage learning

### Reference Books

1. Handbook of Good Laboratory Practice by UNDP/World Bank/WHO (Special Program for Research and Training in Tropical Diseases) pages-226.
2. Training Manual Good Laboratory Practice (GLP) by UNDP/WHO.
3. Quantitative Analysis 6th Edition, R.A.Day, Jr., A. L. Underwood
4. Analytical Chemistry, Dr. Alka Gupta, Pragati Prakashan

### Practical(s)

1. Calibration of glassware's
2. Weighing of samples, accuracy of measurements
3. Preparation of TLC plates
4. Working protocols and calibration of various laboratory instruments like Oven, pH-meter, Conductivity meter, Spectrophotometer and many more.







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## School of Science B.SC. (Zoology) Programme

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

**CCE::**Continuous and Comprehensive Evaluation

(CCETheory 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

