

**MAHARAJA GANGA SINGH UNIVERSITY, BIKANER**

**Ph. D. COURSE WORK IN MICROBIOLOGY**

1. Microscopy.
2. Common laboratory equipments.
3. Isolation of bacteria from air, water, food, and soil.
4. Different staining techniques (Simple, Gram's staining, Spore, Capsule, Acid Fast, and Flagella Staining).
5. Media preparation and its composition.
6. Sterilisation and inoculation.
7. Electrophoresis techniques and its application.
8. Chromatography techniques and its application.
9. Spectroscopy.
10. Biochemical identification of microorganisms.
11. Total lymphocyte, TLC, DLC and ESR estimation.
12. Estimation of blood sugar.
13. Estimation of blood urea.
14. Protozoa detection.
15. Virus detection.
16. Environmental microbiological techniques.
17. Quantitative/Qualitative estimation of Proteins, Carbohydrates and amino acids.
18. Isolation of fungi and Yeast from various sources and study of their morphology.
19. Growth of microorganisms.
20. Diagnosis of diseases from clinical samples.
21. Immunological techniques.
22. Estimation of normal microflora of skin and genitourinal tract.
23. Medical microbiological techniques.
24. Geomicrobiological techniques.