

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF PHARMACY
SEMESTER: V

Subject Name: **Pharmaceutical Microbiology – I**

| Sr. No. | Course contents | Proposed no. of hours of Teaching |
|---------|--|-----------------------------------|
| 1. | Introduction to Scope of Microbiology | 2 |
| 2. | <p>General microbiology:</p> <p>a. Structure and Bacterial Cell, Classification and taxonomy of Actinomycetes, Bacteria, Spirochetes, Rickettsia and Viruses</p> <p>b. Identification: Electron microscopy and Staining Technique</p> <p>c. Nutrition, Cultivation and Isolation of Microbes</p> | 14 |
| 3. | <p>Control of microbes:</p> <p>a. Disinfection: Factor affecting Disinfection i. Dynamics of Disinfection ii. Evaluation of Disinfection</p> <p>b. Sterilization: Methods of Sterilization Validation of Sterilization Methods and Equipment.</p> | 15 |
| 4. | <p>Analytical microbiology:</p> <p>a. Bacterial Counts b. Sterility of Pharmaceuticals c. Microbiological Assay of Vitamins and Antibiotics and Amino acids</p> | 14 |

Pharmaceutical Microbiology and Biotechnology – I – Practical 3hr\week:

1. Preparation of Various Media
2. Subculturing of Common Bacteria (Aerobic and Anaerobic)
3. Staining of Microorganism
4. Methods of Isolation
5. Study of Sterilization and Their Validation
6. Sterility Testing of Pharmaceuticals as per IP
7. Bacterial Counts

References Books:

1. Textbook of Microbiology by Tortora.
2. Pharmaceutical Microbiology, sixth edn, edited by W. B. Hugo and A. D. Rusell Blackwell science.
3. Principles of Microbiology, Ronald M. Atlas. Second edn. W. C. Brown Publishers.
4. Bergeys manual of Systematic Bacteriology, Williams and Wilkins- A Waverly company.
5. Disinfection, Sterilization and Preservation. Fourth edn, Seymour S. Black. Lea and Febiger Philadelphia, London.
6. Industrial Microbiology. Fourth edn, Prescott and Dunn. CBS Publishers and Distributors.
7. Principles of Fermentation Tehchnology. Second edn. P. F. Stanbury, A. Whiteshaker and S. J. Hall Aditya Books Pvt Ltd. New Delhi.
8. Microbiology, Pelczar/Chan Kreig Tata McGraw Hill edn.
9. Industrial Microbiology L.E. Casida, Jr. New age International Publishers.
10. Fundamental Principles of Bacteriology. A. J. Sale, Tata McGraw Hill Publishing Company Ltd.
11. Fundamentals of Microbiology by Forbischer.
12. Bentleys Text book of Pharamceutics.
13. Dispensing Pharmacy by Cooper and Gunn, Twelfth edn.
14. Remington Pharmaceutical Scicence, Latest edn.
15. Microbiology by Ronald Atlas.