

BS (4 Years) for Affiliated Colleges



Code	Subject Title	Cr. Hrs	Semester
BOT-415	Microbiology	3	VIII
Year	Discipline		
4	BOTANY		

Syllabus Outline: All the basic Microbial techniques related to the growth and identification of bacteria and virus.

Course Outline:

Introduction and History of Microbiology, Methods of Microbiology.
Pure Culture Technique, Sterilization, Culture Media, Selective Media, Light Microscopy, Phase Contrast Microscopy, Fluorescent Microscopy, Electron Microscopy.
Bacterial Morphology, Cell Structure and Reproduction.
Bacterial Growth.
Basis of Classification and Major Groups of Bacteria (Bacterial Diversity).
Effect of Environmental Factors on Bacterial Growth.
General Characteristics, Ultrastructure and Multiplication of Virus and Bacteriophages.
Plant Virus, Transmission and Symptoms of Virus Infected Plants, Effect of Virus on Plant Metabolism.

Module Aims: The aim of this course is to train the students in the field of Microbiology. The student will also become acquainted with the Structure and Function of the wide range of Microorganisms studied in Microbiology

Learning Strategies:

1. Lectures
2. Group Discussion
3. Laboratory Work
4. Seminar/ Workshop

Learning Outcome: The student will be able to understand the vast Diversity of Bacteria and Viruses, related to the Isolation and Culturing Techniques.

Assessment Strategies:

1. Lecture Based Examination (Objective and Subjective)
2. Assignments
3. Class Discussion
4. Quiz
5. Tests

Books Recommended:

1. **Alcamo, I. E. (2010).** *Fundamentals of Microbiology*. (9th Ed.), Jones & Bartlett Publishers, USA.
2. **Tortora, G.J., Christine L., Case, C.L., Funke, B.R., Funke, B. and Case, C. (2008).** *Microbiology: An Introduction* (9th Ed), Pearson Education Publishers.
3. **Talaro, K.P. (2006).** *Foundations in Microbiology: Basic Principles*. McGraw Hill. Publisher.
4. **Black, J.G. (2005).** *Microbiology: Principles and Explorations*, (6th Ed.), Publisher McGraw Hill.
5. **Pelczar, M.J., Chan, E.C.S. and Krieg, N.R. (2000).** *Microbiology*. (8th Ed.), MacGraw Hill.
