

BS (4 Years) for Affiliated Colleges



Code	Subject Title	Cr. Hrs	Semester
BOT-410	Microbes, Man and the Environment (Lab.)	1	VIII
Year	Discipline		
4	BOTANY		

Syllabus Outline: Types of Microbes and their Evolution; Distribution of Microbes in the Environment and Strategies for Success; Positive and Negative Interactions of Microbes with Men.

Course Outline:

The practicals in this course will introduce the students to a wide range of Microbiological Laboratory Techniques. Skill development in the handling and growth of Microorganisms is a key part of the Practicals. Students will perform Assays on Antibiotics and study a range of Yeast, Bacteria and Fungi. Assessment will comprise a practical skill Competence Test and short Answers Questions.

Module Aims: To highlight the Role of Microbes in the Environment and Ecosystem and to show their Beneficial and Detrimental Roles in the Environment and on Men.

Learning Strategies:

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

Learning Outcome: To enhance the understanding of MICROBES to students, their Importance and Positive/Negative Interactions with Man.

Assessment Strategies:

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

Books Recommended:

1. **Edwards, C. (2008).** *Microbiology of Extreme Environments; Environmental Biotechnology.* McGraw Hill.

2. **Mitchell, R. (2006).** *Environment Microbiology*. John Wiley and Sons, Inc. New York.
3. **Black, J.G. (2005).** *Microbiology: Principles and Explorations*, (6th Ed.). McGraw Hill, Publishers.
4. **Holt, J.G., Krieg, N.R., Speath, P.H.A., Steley, J.T. and Williams, S.T. (2005).** *Bergey's Manual of Determinative Bacteriology*. (10th Ed.), William and Wilkins Publishers.
5. **Cappuccino, J.G. and Sherman, N. (2002).** *Microbiology, A laboratory Manual*, (4th Ed.), The Benjamin Cummings Publishing Company Inc.
6. **Sayler, G.S. and Fox, R. and Blackburn, J.W. (2001).** *Environmental Biotechnology for Waste Treatment*. Plenum Publishing Corporation.
7. **Alexander, M. (2001).** *Biodegradation and Bioremediation*. Academic Press, Inc.
8. **Mitchell, R. (1992).** *New Concepts in Environmental Microbiology*. Alan R. Liss.
