

BS (4 Years) for Affiliated Colleges



Code	Subject Title	Cr. Hrs	Semester
BOT-408	Biodegradation and Bioremediation (Lab.)	1	VII
Year	Discipline		
4	BOTANY		

Syllabus Outline: Bacterial Isolation from different Environmental Sources, Techniques for Testing Degradation Ability of Bacteria.

Course Outline:

1. Isolation of Bacteria from Oil Wastes, Polluted Water from Industries and Sewage.
2. Spray Plate Technique for Testing the Degradation Ability of Bacteria for different Aromatic Hydrocarbons.
3. Bioremediation from Culture by Metal Resistant Bacteria.

Module Aims: The course is designed in a way to understand how Biodegradation of Pollutants is done practically.

Learning Strategies:

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

Learning Outcome: After studying this course, students will be in a condition to understand how we can Clean our Environment from Pollutants by Depredating Organisms and its Practical Applications.

Assessment Strategies:

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

BOOKS RECOMMENDED:

1. **Tortora, G.J., Christine L., Case, C.L., Funke, B.R., Funke, B. and Case, C. (2006).** *Microbiology: An Introduction*. Pearson Education Publishers.
2. **Borlak, J. (2005).** *Handbook of Toxicogenomics: Strategies and Applications*. John-Wiley and Sons Limited.
3. **Heikki, M., Hokkanen, T. and Hajek, A.E. (2004).** Environmental Impacts of microbial Insecticide: Needs and Methods for Risk Assessment, Science.
4. **McEldowney, S., Hardmen, D.J. and Waite, S. (2003).** *Pollution: Ecology and Biotreatment*. Longman Scientific Technical.
5. **Mitchell, R. (2002).** *Environmental Microbiology*. (2nd Ed.), Wiley Liss.
6. **Tickner, J.A. (2002).** *Precaution, Environmental Science, and Preventive Public Policy*. Island Press.
7. **Sunahara, G.I., Agnes Y., Renoux, A.Y., Thellen, C., Gaudet, C.L., and Pilon, A. (2002).** *Environmental Analysis of Contaminated Sites*. John-Wiley and Sons Limited.
8. **Chapelle, F.H. (2001).** *Ground – Water Microbiology and Geochemistry* (2nd Ed). John Wiley and Sons. Inc.
9. **Alexander, M. (1999).** *Biodegradation and Bioremediation*. Academic Press, Inc.
10. **Poole, R. K. and Gadd, G.M (1989).** *Metal Microbe Interaction*. IRL Press.
