

SARDAR PATEL UNIVERSITY
Programme: BSC (MICROBIOLOGY)
Semester: VI
Syllabus with effect from: November 2013

Paper Code: US06CMIC05	Total Credit: 3
Title Of Paper: Agriculture and Environmental Microbiology	

Unit	Description in detail	Weighting (%)
1	Symbiotic & asymbiotic nitrogen fixation. Nitrogen fixation - Structure & mechanism of nitrogenase. Biofertilizers- Definition, Azotobacter & Rhizobia (With Production) Microbial insecticides.	
2	Biobleaching & bioleaching of Copper. Biodeterioration of wood, paint & metal. Bioremediation-introduction. Bioremediation of petroleum hydrocarbon & chlorinated compounds. Microbial enhanced oil recovery.	
3	Concept of xenobiotics & recalcitrance. Biomagnification. Biodegradation of environmental pollutants. (ABS, Chlorinated hydrocarbons, Oil pollutants.) Biodegradable polymers.	
4	Introduction to biofuels. Renewable & nonrenewable energy resources. Features of biofuels. Biogas - substrate, microorganisms & production. Advantages & disadvantages of Biogas production.	

Basic Text & Reference Books:

- Principles of Microbiology - R M Atlas
- Comprehensive Biotechnology.
- Microbiology - Prescott L M.
- Advances in Agricultural Microbiology - N S Subbarao.
- Biofertilizers & Organic Farming- Vyas & Modi.
- Biotechnology - B D Singh.

