

SARDAR PATEL UNIVERSITY
Programme: BSC (BOTANY)
Semester: V
Syllabus with effect from: June 2013

Paper Code: US05CBOT03	Total Credit: 3
Title Of Paper: Microbiology, Microtechnique and Forestry	

Unit	Description in detail	Weighting (%)
1	Microbiology Introduction, general characters of bacteria and viruses, economic importance of bacteria, viruses, distribution of bacteria, morphology and structure of bacteria and virus, staining of bacteria, nutrition of bacteria, host-parasite interaction, bacterial reproduction, transmission of viruses, properties of viruses, Actinomycetes (a brief introduction).	
2	Microtechnique General account of killing and fixing, Agents used for killing and fixing. Common fixatives, Formalin, Acetic, Alcohol, Carnoy's fluids I & II, Chromic acid, Acetic acid, Formalin (CRAF), Free hand sectioning; Microtome (Rotary and sledge) serial sectioning and its significance. Dehydration and infiltration, general account of dehydration (Ethanol, Isopropyl alcohol, Acetone, Glycerine). Ethanol, Xylene series and Tertiary Butyl Alcohol Series. Infiltration, paraffin wax method, Embedding. Staining, General account, Classification: natural dyes, coal tar dyes, Histochemical Staining, Vital staining. Mounting: Whole mount, maceration and smear	
3	Forest utilization: Structure, properties and uses of timbers; Conversion, wood seasoning and wood preservation, Sources, properties and uses of fibers, tannins, dyes, oils, gums and resins.	
4	Forest based industries: Paper and pulp, composite wood and improved wood, Cutch and katha, Lac shellac and rubber, resin, turpentine and rosins, charcoal	

Basic Text & Reference Books:

- College botany - Gangulee and Kar
- Hand book of forest utilization: T. Mehta
- Plant microtechnique: Johanson, D.A.

