

Credits: 0+2

16.08.2022	1.	Dr AKS Dr AKG	I INSTRUMENTS & TECHNIQUES 3. Buffer preparation & titration 4. Cleaning and Sterilization of glassware 6. Inoculation and culturing of bacteria in Nutrient agar and nutrient broth 7. Preparation of agar slant, stab, agar plate 8. Phenol Coefficient method to test the efficacy of disinfectants	1. Laboratory safety and good laboratory practices 2. Principles and application of Laboratory instruments- microscope, incubator, autoclave, centrifuge, LAF, filtration unit, shaker, pH meter
20.08.2022	2.	Dr AKS Dr AKG	II BACTERIAL IDENTIFICATION	5. Preparation of media- Nutrient Agar and Broth Staining techniques
26.08.2022	3.	Dr AKS Dr AKG	1. Isolation of bacteria. 2. Identification of bacteria. 3. Gram's, Negative, Endospore, Capsule and Cell Wall. 4. Cultural characteristics of bacteria on NA. 5. Pure culture techniques (Types of streaking). Carbohydrate fermentation test, Mannitol motility test, Gelatin liquefaction test, Urease test, Nitrate reduction test, Catalase test, Oxidase test, Starchhydrolysis	6. Biochemical characterization: IMViC, 5. Pure culture techniques (Types of streaking).
27.08.2022	4.	Dr AKS Dr AKG	MYCOLOGICAL STUDY: Saprophytic, Coprophilous, Keratinophilic. 2. Identification of fungi by lactophenol cotton blue method. Rhizopus, Saccharomyces, Penicillium, Peziza, Ustilago, Puccinia; Fusarium, Curvularia, Alternaria. 4 3. Agaricus: Specimens of button stage and fullgrown mushroom; Sectioning of gills of Agaricus. 4. Lichens: crustose, foliose and fruticose specimens	1. Isolation of different fungi: OR 2. Identification of fungi by lactophenol cotton blue method.
02.09.2022	5.	Dr AKS Dr AKG		3. Agaricus: Specimens of button stage and full grown mushroom; Sectioning of gills of Agaricus. 4. Lichens: crustose, foliose and fruticose specimens
03.09.2022	6.	Dr AKS	IV	Volvox,

		Dr AKG	PHYCOLOGY: 1. Type study of algae and Cyanobacteria – Spirullina, Chlorophyceae - Chlorella, Cladophora, and Xanthophyceae – Vaucheria; Bacillariophyceae – Pinnularia Phaeophyceae – Rhodophyceae - Polysiphonia	Chara; Oedogonium, /Sargassum
10.09.2022	7.	Dr AKS Dr AKG	V EXPERIMENTAL PLANT PATHOLOGY	2. Isolation of pathogen from diseased leaf. 3. Identification: Pathological specimens of Brown spot of rice, Bacterial blight of rice, Loose smut of wheat, Stem rot of mustard, Late blight of potato;
16.09.2022	8.	Dr AKS Dr AKG		1. Preparation of fungal media (PDA) & Sterilization process. Slides of uredial, telial, pycnial & aecial stages of Puccinia
23.09.2022	9.	Dr AKS Dr AKG	.	viral and bacterial plant diseases. (YVMB, Citrus canker)
24.09.2022	10	Dr AKS Dr AKG	VI PRACTICALS IN APPLIED MICROBIOLOGY- 1. Isolation of nitrogen fixing bacteria from root nodules of legumes.	. from root nodules of legumes root colonization by VAM fungi
30.09.2022	11	Dr AKS Dr AKG		2. Enumeration of rhizosphere to non rhizosphere population of bacteria. 3. Isolation of antagonistic Pseudomonas from soil
01.10.2022	12	Dr AKS Dr AKG		4. Microscopic observations of. 5. Isolation of Azospirillum sp. from the roots of grasses.
07.10.2022	13	Dr AKS Dr AKG		6. Isolation of phyllosphere microflora. 7. Isolation of P solubilizing microorganisms.
08.10.2022	14	Dr AKS Dr AKG	VII PRACTICALS IN APPLIED MICROBIOLOGY	Wine production Isolation of lactic acid

14.10.2022	15	Dr AKS Dr AKG		Isolation of cellulolytic and anaerobic sulphate reducing bacteria.8. Isolation and characterization of acidophilic, alkalophilic and halophilic bacteria
15.10.2022	16	Dr AKS Dr AKG		Immobilized bacterial cells for production of hydrolytic enzymes.5. Enzyme production and assay – cellulase, protease and amylase.6. Immobilization of yeast.
28.10.2022	17	Dr AKS Dr AKG		Isolation of lipolytic organisms from butter bacteria from curd.
29.10.2022	18	Dr AKS Dr AKG	VIII 1. Spirulina, & in lab for biofuel 2., Varanasi(Kashi)/ IMTECH (Institute of Microbial Technology),Chandigarh for viewing Culture Repository 3. Visit to biofertilizers and biopesticides unit to understand about the Unit operation procedures	Cultivation of Chlorella
05.11.2022	19	Dr AKS Dr AKG		Visit to NBAIM, Mau Mushroom cultivation for Protein
11.11.2022	20	Dr AKS Dr AKG		Alcohol production. from Sugarcane Juice. Assignment project Chart preparation
12.11.2022	21	Dr AKS Dr AKG		Field visit