GENERAL AND APPLIED MICROBIOLOGY

Semester	Subject code	Category	Lecture		Theory		Practical		Credits
			Total hrs	Hrs/ week	Total hrs	Hrs/ week	Total hrs	Hrs/ week	
I	21CPMB21	Practical	0	0	0	0	60	4	5

General Microbiology

1.Handling and maintenance of light microscopy, dark field and phase contrast microscopy.

2.Wet mount of Hay Infusion broth.

3.Micrometry.

4.Motility determination – Hanging drop method.

5.Staining – Simple, Gram, Acid fast, Spore, Capsule, Flagellar staining.

6.Sterilization – Principles, methods – moist heat, dry heat, filtration.

7.Pure Culture techniques – Streak plate, Pour plate and Spread plate.

8.Media preparation – Liquid, Solid, Agar deep, & Slants.

9.Anaerobic Cultivation - Anaerobic jar (Total anaerobes).

10.Antibiotic sensitivity test – Kirby Bauer & MIC.

11. Fermentation of carbohydrates and submerged fermentation.

12. Growth and Growth requirements – bacterial growth curve – turbidimetry. Direct count, viable count.

Applied Microbiology

1.Microbiological analysis of food products – bacterial, fungal. Direct bacterial count from milk. Standard plate count in milk.

2.Reduction test for milk – Methylene blue/ Resazurin.

3.Enumeration of microorganisms from soil and air.

4.Isolation of Azotobacter, Rhizobium, Phosphate solubilizers, ammonifiers, denitrifiers.

5.Extracelular enzyme activity- cellulase, protease, lipase and phosphatase.

6.MPN technique

7.Estimation of BOD and COD.

8.Field trip.