

**CORE COURSE I – GENERAL MICROBIOLOGY**

**UNIT 1:**

History of Microbiology, Methods of sterilization, Microscopic Principles and applications – Electron microscopy (TEM and SEM) Prokaryotic and Eukaryotic microorganisms. Classification of microorganisms.

**UNIT II:**

Ultra structure of algae, bacteria, fungi, viruses and protozoan, sub cellular structures and cell envelope-slime, capsule, cell wall, cell inclusion, biosynthesis of bacterial cell wall – Nutrition – commercial product, reproduction and life cycle pattern.

**UNIT III:**

Aerobic and anaerobic nutritional requirements – macro nutrients – growth factors – selective / differential media – enrichment media – microbial assay media. A general account of algal photosynthesis – chemo synthesis.

**UNIT IV:**

Factors influencing and affecting microbial growth – growth determination Growth and death kinetics – pH, temperature and light, Bacteriostatic, disinfections, control of microorganisms – physical and chemical agents, antimicrobial chemo therapy.

**UNIT V:**

Gene transfer in microbes, conjugation, Transformation, Transduction, Transfection sex factor.

**REFERENCES:**

1. Microbiology- M.J. Pelczar, Jr., E.C.S. Chang and N.R. Krieg, McGraw Hill Company, Newyork (1986).
2. Microbiology-concepts and applications, M.J. Pelczar, Jr., E.C.S. Chang and N.R. Krieg, McGraw Hill Company (1993).
3. Microbiology – L.M. Prescott, J.P. Hareley D.A. Klein – Wm.c. Brown publishers. Dutique, Jawa, Melbourne. 1993.
4. Modern Microbiology – wayne w. Umbreit – W.H, Freeman and company, son francisciscod London (1962).
5. Basic and Practical Microbiology – Ronald M. Atlas, Mac.Milleen Company, Newyork (1986).