

**CORE COURSE III - MICROBIAL PHYSIOLOGY**

**UNIT I:**

Introduction of cellular physiology, transportation mechanism, permeability of water. Salts and signal hypothesis.

**UNIT II:**

Synthesis of carbohydrates – anabolism – Photosynthesis \_ Oxygenic, an Oxygenic, pentose pathway, TCA cycle, ATP production, Glycolysis, Glycogenesis, Gluconeogenesis.

**UNIT III:**

Metabolism of proteins, pathways of nitrogen utilization, regulation of protein synthesis, synthesis of aminoacids and peptides.

**UNIT IV:**

Anabolic and catabolic process of lipids and nucleic acids – inborn error of lipid metabolism.

**UNIT V:**

The role of enzymes and vitamins in the metabolic pathways. Physiology of extremophiles. Some inborn abnormalities / disorders of metabolism.

**REFERENCE:**

1. Pelczar Jr., M.J., Chang E.C.S., and Treig NR (1993). Microbiology – McGraw Hill Inc., Newyork.
2. Stainer R.P., Ingraham J.I., Wheelis M.L., and Painter P.R. (1986) General Microbiology, Mac Millan Education Ltd., London.
3. Murray R.K., Granner M.D., Mayes P.A., and Redwell V.W. (1990) Biochemistry – Prentice Hall International Inc., London.
4. Biochemistry by Lehninger – Worth publications inc 1982. CBS publication, New Delhi.