

CORE COURSE III – MICROBIAL GENETICS

Unit I

Mendelian laws of inheritance – Gene as the Unit of expression in prokaryotes. Colinearity between nucleic acid and proteins, Hot spots.

Unit II

Methods of genetic transfer: Bacterial transformation, conjugation and transduction.

Unit III

Biology of plasmids, types and their applications.

Unit IV

Fine structure mapping (2 point test crop, 3-point test crop) Regulatory mutants in Lac Operon – Transposon mutagenesis.

Unit V

Mutation – induced and spontaneous – screening mutagenic agents, mechanism of action – repair mechanisms.

Reference:

- i. Microbial Geneics (1994) – S.R. Maloy, J.E. Cronan & D. Friefelder. Jones and Bartlett Publishers.
- ii. Concepts of Genetics (1997) – W.S.Klug & M.R. Cummings, Prentice Hall.
- iii. Molecular biology of the cell 1994 3rd edition. Albert et al., Garland Publishing Inc.