

BIODIVERSITY (Dr. Nirotpal Mrinal)

(2 credits)

1. Evolutionary science
2. Creationism, Darwin, Lamarck and Weismann
3. RNA world, evolution of genes and genomes
4. Evolution of gene, gene function, plasmids, phage, transposable elements, recombination, genetic drift
5. Molecular evolution and phylogeny, tree of life, evolution of eukaryotes and multicellularity
6. Phenotypic evolution, Evo- Devo, macro-evolution and co-evolution
7. Allele frequency, species and speciation, natural selection, adaptation, genetic variation, fitness
8. Evolution above the species level, evolution of diversity, evolution of novelty, evolution of sex and sexually dimorphic features
9. Community ecology, behavioral ecology, species interaction, conflict and co-operation, ecosystem dynamics, biodiversity, energy flow, physiological ecology, population ecology

Suggested Reading:

1. *Ecology: From individuals to ecosystem, Begon and Harper, Blackwell publishing*
2. *Ecology: Concepts and applications, Molles, 4th edition, McGraw Hill*
3. *Principles of population genetics, Hartl*
4. *Evolution, Nipam Patel, CSHL press*