

STAT-6114

Environmental Sciences

This course provides the concepts of ecosystem, basic global ecosystem, biological, nitrogen, phosphorus, sulphur and water cycle. It includes the study about the interaction of the physical, chemical and biological components of the environment and also the relationship and effect of these components with the organisms in the environment.

Contents

1. An overview of concepts of ecosystem with emphasis on interaction and homeostasis, Basic global ecosystems, Biological cycle, nitrogen, phosphorus, Sulphur, water, carbon nutrients, Limiting factors, basic concepts, temperature, Soil, Water & Humidity, Light, Fire, Energy.
2. Laws of thermodynamics, Primary and Secondary productions, trophic levels and energy variation with increasing trophic levels, energy flow, food chains and food webs, Population ecology, basic population characters.
3. Growth and growth curves, population dynamics and regulations, Community ecology, basic concepts and types, An overview of major biomes of the world, Applied Ecology, Resources and their ecological management mineral, agriculture and forest, range management.
4. Desalination and weather modification, landscape and land use, Pollution, water, air land pollution, noise pollution, Radiation Space biology, Contemporary environmental themes, (Ozone depletion, acid rain, Green house affect & global warming, desertification, deforestation, exotic & invasive Species, radio activity leakage, environmental Laws).

Recommended Books

1. Odum. E.P 1994, Fundamentals of Ecology. W. B. Saunders.
2. Molles. M.C. Ecology; Concepts and application McGraw Hill. Boston.

Suggested Books

1. Dondson . S. L., Allen, T.F.N, Carpenter, S; R., Ives, A., Jeanne, R.L. Kitchell, J.F. Langston, N.F. and Turner, M.G.1998. Ecology. Oxford University, Press Oxford.
2. Sineby. D and Cork D. 1986. Practical Ecology, McMillan Education Ltd, London.