

Environmental Science/Studies Syllabus
UG Programme
Nagaland University

Credit=2, Total Marks= 50

Unit-1: Basics of Environment

Environment definition, Components of environments, Scope and significance of environment studies; Structure and function-lithosphere, hydrosphere, atmosphere and biosphere; Structure and function of an ecosystem; Food chains, food webs and ecological pyramids; Energy flow in the ecosystem; Ecological succession; Natural resources; Biogeochemical cycles; Environmental hazards and their managements; Population growth, Environment and human health; Major environmental and socio-economical problems; Sustainable development.

Unit 2: Biodiversity and its conservation

Concept of diversity; Hot-spots of biodiversity; Biodiversity at global, National and local levels; Value of biodiversity; Threats to biodiversity; Biological invasions; Endangered and endemic species; Conservation of biodiversity; In-situ and Ex-situ conservation techniques, Bioprospecting of natural resources; Biopiracy; Intellectual property rights (IPR); Indigenous traditional knowledge (ITK).

Unit 3: Environmental Pollution

Concept and scope of environmental chemistry, Classification and sources of pollutants and their global, regional and local aspects; Transport, transformation and fate of chemicals in the environment; Treatment of water and waste water; Control of air pollutants; Control devices for particulate matter; Sound pollution and its management; Management of solid waste pollution; Plastic waste; E-waste; Hazardous waste.

Recommended Books:

1. Odum, E. P., Odum, H. T. and Andrews, J., Fundamentals of Ecology. Philadelphia, Saunders, 1971.
2. Bharucha, E., Textbook for Environmental Studies, University Grants Commission, New Delhi and Bharati Vidhyapeet Institute of Environmental Education and Research, Pune, 2003.
3. Sodhi, N. S., Gibson, L. and Raven, P. HG., Conservation biology: voices from the Tropics. John Wiley and Sons, 2013.
4. Grotzinger, J. and Jordan, T.H., Understanding Earth (7th ed.), W.H. Freeman and company, 2014.
5. Singh, V. P., Elementary Hydrology, Prentice-Hall, India, 1994.
6. De, A. K., Environmental Chemistry (8th ed.), New Age Publishing Pvt. Ltd., New Delhi, 2016.
7. Manahan, S.E., Fundamental of Environmental Chemistry (8th ed.), CRC Press, Florida, 2004.
8. Handbook of Environmental Health and Safety – principle and practices (Vol. II): H.