

**SEMESTER – II - CORE COURSE – VI (CC):
ENVIRONMENTAL BIOLOGY AND GEOLOGY**

UNIT 1:

Components of Environment - biotic and abiotic factors. Principles and concepts of ecosystem: producers, consumers decomposers. Primary productivity and secondary productivity, Food chains, Food webs, Energy flow, Trophic structure and Ecological pyramids. Biogeochemical cycles - oxygen cycle, carbon cycle, nitrogen cycle, sulphur cycle and phosphorous cycle.

UNIT 2:

Ecosystem types - Aquatic- Freshwater- Pond, River. Marine-Estuary, Mangroves, Seagrasses, Corals, Deep sea.

UNIT 3:

Population: Definition, characteristics of population density, natality, mortality, age distribution, growth patterns, population fluctuation, population equilibrium, biotic potentials, population dispersion, Regulation of population.

Community: Definition, characteristics of community, Community dominance, Community structure, Community stratification, Community periodicity. Fluctuations within the community, Communal interdependence, Ecotone, Edge effect, Ecological niche, Ecological equivalents, Ecological succession, types, process, climax and significance of succession.

UNIT 4:

Environmental Geology: Structure and composition of atmosphere –Energy budget of the earth. First and second law of thermodynamics. Atmospheric mass transfer and weather-Movement of air masses- global weather changes. Atmospheric stability, Inversion.

UNIT 5:

Climates of India, Indian monsoon, El Nino, Drought, Tropical cyclones, Western disturbances, and catastrophic geological hazards. Study of floods, landslides, earthquakes, volcanism and avalanche. Mineral resources-ores of Al and Fe.

REFERENCES

1. Agarwal, 1996. Environmental Biology. Agro Botanical publishers, India.
2. Bhatia, S.C, 2002. Environmental chemistry, CBS publishers and Distributors, New Delhi.
3. Chapman, J.L. and Reiss, M.J. 1995. Ecology-Principles and applications. Cambridge University Press (Low price edition). Pp. 294.
4. Clarke A.C. Elements of Ecology John Wiley, London.
5. Das gupta. A, and Kapoor. A.N, 1999. Principle of physical geography. Chand and company limited, New Delhi.
6. Mishra P.C. and Trivedy R.K. 1994. Ecology and Pollution of Indian Lakes and reservoirs. Enviromedia, Karad.
7. Odum E.P. 1971. Fundamentals of Ecology, W.B. Saunders Co. Philadelphia and London.
8. Sharma P.D. 2003. Ecology and Environment. Rastogi Publication, Meerut.
9. Shukla and Chandel, 1998. Plant Ecology and Soil science. Chand and company limited, New Delhi.