

MANGALORE UNIVERSITY
DEPARTMENT OF BIOSCIENCES
M.Sc. ENVIRONMENTAL SCIENCE

ESE461 BASIC SCIENCE CONCEPT IN ENVIRONMENT

Course Outcomes:

CO1 Describe the fundamental aspects of environment and to know the scope of environmental science.

CO2 Understand the structure and composition of atmosphere and hydrosphere.

CO3 Understand biotic and abiotic factors of ecosystems.

CO4 Learn different biogeochemical cycles of elements.

UNIT I (13 hours)

Definition and scope of Environmental Science; Earth and its environment: Structure and Composition. Biosphere-Atmosphere, Lithosphere, Hydrosphere and Water cycle.

UNIT II (13 hours)

Atmosphere: Structure and composition. Temperature, pressure, humidity of atmosphere. Winds and clouds – their classification, formation and circulation, artificial rain, acid rain, global warming, green house effect.

UNIT III (13 hours)

Hydrosphere: Water as a resource, sources of water, water related issues, purification of water, water management.

Biogeochemical Cycles: Sedimentary cycles, gaseous cycles, cycling of heavy metals and radioactive compounds, Effect of anthropogenic activities on biogeochemical cycles.

References

1. Agrawal, K.C., 2001. Fundamentals of Environmental Biology, Nidhi Publishers, Bikaner, India.
2. Asthana D.K. and Meera Asthana, 2006. A text Book of Environmental Studies, S. Chand & Co. Ltd., New Delhi.
3. Clarke, G.L., 1974. Elements of Ecology, John Wiley & Sons, New York.
4. Odum, E.P., 1971. Fundamentals of ecology.
5. Arya, S.P., 2002. Introduction to Micrometeorology, 2nd Ed.
6. Gilbertson, D.D., Kent, M. & Pyatt, K.B., 1985. Practical ecology for Geography and Biology: Survey, Mapping and Data Analysis. Hutchinson.
7. Haines – Young, R.H. & Petch, J.R., 1986. Physical Geography: its nature and methods. Harper.
8. John, J.W.R. and Geoffrey, F.P. 1998. People and the Earth, Cambridge University Press.
9. Tucker, M., 1988. Techniques in Sedimentology. Blackwell.