

India.

3. Khopkar, S.M. 1998. Basic concepts of Analytical Chemistry, 2nd Edition, New Age International Publ.
4. Khopkar, S.M. 1993. Environmental Pollution analysis, Wiley Eastern Ltd.
5. Skoog, D.A., Holler, F.J. and Nieman, T.A. 1980. Principles of Instrumental analysis, 5th Ed. Thomson Asia Pvt. Ltd., Singapore.
6. Vogel, A.I. 1998. Quantitative analysis, 6th Edition, Prentice Hall Inc.

ESS466 ENVIRONMENTAL TOXICOLOGY

39 hrs.

Course Outcomes:

CO1 Introduce the importance of toxicology in environmental science.

CO2 Learn toxicity testing to detect environmental toxicants.

CO3 Understand various terminologies used in toxicology.

CO4 Describe various toxicants found in the environment.

CO5 Learn toxicological tests in environmental samples which help in employability.

UNIT I (13 hours)

Introduction to toxicology, scope of environmental toxicology, subspecialties of toxicology, description and terminology of toxic effects, factors influencing toxicity, drug toxicity, biochemical basis of toxicity – mechanism of toxicity and receptor mediated events, acute and chronic toxicity. Selective toxicity. Dose response relationship-graded response time action curves, threshold limit value, LC₅₀, LD₅₀, Margin of safety and toxicity curves.

UNIT II (13 hours)

Bioaccumulation and Biomagnifications of toxic materials in food chain, Toxicology of major pesticides-Environmental impacts of pesticides, biotransformation, biomonitoring, programs and parameters of biomonitoring. Basic concepts of Environmental forensics.

UNIT III (13 hours)

Concepts of Bioassay- types, characteristics. Importance and significance of bioassay, field based microbial bioassay for toxicity testing, particulate matter sources, bioassay for residue analysis; health impacts of specific particulate matter, chronic and acute effects of particulate matter on respiratory system, mechanism of impact of particulate matter on cardio vascular system.

References:

1. Anisa Basheer. 1995. Environmental Epidemiology, Rawat Publication, Jaipur, New Delhi.
2. Meera Asthana and Astana, D.K. 1990. Environmental pollution and Toxicology, Alka Printers.
3. Park, J.E. and Park, K. 1985. Text book of Preventive and Social Medicine, Banosidas Bharat Publishers, Jabalpur.
4. Sharma, P.D. 1994. Environmental biology and Toxicology, Rastogi and Lamporary.
5. Sood, A., Sarup and Sons, 1999. Toxicology, New Delhi.