

SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (Inorganic Chemistry)
Semester: IV
Syllabus with Effect from: June - 2013

Paper Code: PS04ECHE05	Total Credit: 4
Title Of Paper: Environmental Chemistry	

Unit	Description in detail	Weightage (%)
I	Introduction to Environmental Chemistry; Concepts and scope of study, Environmental composition, nomenclature of some useful terms, and ecology. Hydrosphere; Water resources, Physical and Chemical properties of water, sea water model, microbiological processes, organic and inorganic matters in water. Lithosphere; Concentric layers of earth, Physical and Chemical weathering processes, composition of soil, Nitrogen cycle and NPK in soil. Atmosphere; Composition & structure of atmosphere, particles, ions, radicals and chemical reactions in atmosphere. Biosphere; Definition, ecosystem and natural cycles.	25%
II	Air Pollution: Environmental pollution, classification of pollutants, environmental indicators. Sources and effect of air pollutants: SMOK, FOG, SMOG, PAN, PAH, greenhouse effect, acid rain, ozone depletion, EL Nino phenomena. Analysis of air pollution.	25%
III	Water Pollution: Definition, types of waters pollutants, Environmental toxicology and toxic elements & pesticides in water, Impact on enzymes, Biochemical effect of pesticides. Water and waste water analysis; collection of sample, Determinations of water quality parameters: Alkalinity, acidity, TDS, TH, D.O., BOD, COD, Chlorides, sulphate, nitrate and nitrite etc.	25%
IV	Soil Pollution and Waste Management: Introduction to soil pollution; waste and pollutants in soil. Classification of wastes, overview of waste management program, green chemistry, methodologies, techniques available and new approaches.	25%

Basic Text & Reference Books:-

- Environmental Chemistry by J.W.Moore & E.A.Moore, Academic Press.Inc.New York,1976
- Environmental Chemistry by A.K.De,4th edition, New Age International Publishres
- Principles of Environmental Science: Inquiry and applications by William P. Cunningham & Mary A. Cunningham,1st edition,2002,Tata McGraw Hill Publishing Company Ltd.,New Delhi

