SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (Industrial Chemistry)
Semester: I
Syllabus with Effect from: June-2015

Paper Code: PS01EICH07	**Total Credit: 4**
Title Of Paper: Water Pollution Control Technology	

Unit	Description in Detail	Weightage (%)
I	Water quantity: water and its properties, necessity of water, water demand, factors affecting water demand, population forecast by different methods.Water quality: sampling, sample preservation, physical characteristics, chemical characteristics and biological characteristics, drinking water standards, pathogens and disease, nuisance organisms	25%
II	Supply of water: sources of water and their characteristics: water from precipitation, surface water, ground water & saline intrusion. Sewerage collection and distribution system (types of sewer, types of traps, types of sewerage system etc.)	25%
III	Water treatment: Basic of unit operations: Aeration, limitation of aeration, types of aerators, chemical handling and feeding, coagulation and flocculation, rapid mixing, slow mixing, filtration slow sand, rapid sand pressure. Disinfection: criteria for good disinfection, factors affecting efficiency of disinfection.Chlorination: chlorine chemistry, chlorination practices in India.Introduction to advanced water treatments: Ion exchange, water softening, membrane technology, control of colour, odour, taste etc.	25%
IV	Waste water minimization by different methods: Recycle, reuse, process modification, product/raw material substitutions, technology change etc. Water conversion by pinch technology	25%

Basic Text & Reference Books:-

- Water supply and sanitary engineering ,G. S. Birdie & J. S. BirdieDhanpatrypub.Co. Ltd.
- Ground water assessment and management,K. R. Karanath,Tata Mc Graw hill
- Advance in waste water treatment tech.vol – 2,R. K. Trivedy& N. S. Roman Globalscience
- Sewage disposal and air pollution engineering volume – 2 ,Garg S. K.
- Water supply engineering volume – 1 ,Garg S. K.
- Environmental Engineering, Howard Peavy