

Course Number and Name												
BCE505 - ENVIRONMENTAL ENGINEERING												
Credits and Contact Hours												
3 & 45												
Course Coordinator's Name												
Ms.B.Saritha												
Text Books and References												
TEXT BOOKS:												
<ul style="list-style-type: none"> Garg S.K.Environmental Engineering, Vol.I & II, khanna Publishers, New Delhi, (1994). Water Supply Engineering, R.Pannirselvam, SPGS-Publications, Adambakkam, Chennai-600088, (2007). Wastewater Engineering, SPGS-Publications, Adambakkam, Chennai-600088,(2007). C.S.Shah, Water Supply Sanitation, Galgotia Publishing Company, New Delhi, (1994). 												
REFERENCES:												
<ul style="list-style-type: none"> Manual on Water Supply and Treatment, CPHEEO, Ministry of Urban Development, Government of India, New Delhi, (1999). Manual on Sewerage and Sewage Treatment, CPHEEO, Ministry of Urban Development, Government of India, New Delhi, (1993). Wastewater Engineering – Treatment and Re-Use, MetCalf & Eddy, Inc., Tata McGraw-Hill Publishing Company, New Delhi-(2003). 												
Course Description												
<ul style="list-style-type: none"> To make the students conversant with principles of water supply, treatment and distribution 												
Prerequisites						Co-requisites						
Environmental Studies						NIL						
required, elective, or selected elective (as per Table 5-1)												
Course Outcomes (COs)												
CO1	Plan water supply system for developing area											
CO2	Design the various treatment plant in water supply system											
CO3	Treat the drinking water using advanced techniques											
CO4	Design the water distribution systems											
CO5	Principles of design of water supply and drainage in buildings											
Student Outcomes (SOs) from Criterion 3 covered by this Course												
	COs/SOs	a	b	c	d	e	f	g	h	i	j	k
	CO1			H	M							
	CO2	M		H	M				M			

CO3			H	M							L
CO4	L		H	M							
CO5	M		H	M							

List of Topics Covered

UNIT-I PLANNING FOR WATER SUPPLY AND SEWERAGE SYSTEMS 9

Public water supply System and Sewerage system – Design Period – Prediction of population during design period – Selection of Sources of Water supply – Conveyance of Raw Water - Treatment site – Piped Flow – Open Channel Flow – Layout of Water Treatment Plant.

UNIT-II WATER TREATMENT SYSTEMS 9

Raw water Quality – Impurities in Water – Water Quality Standards – Plain Sedimentation - Pumping to Chemical House – Coagulation – Hydraulic Jump / Flash Mixer - Clariflocculator – Rapid Sand Filtration – Iron & Manganese Removal - Post Chlorination – Clear Water Tank – Pumping to Overhead Tank.

UNIT-III WATER DISTRIBUTION SYSTEM 9

Water Distribution Layout – Service Reservoirs – Hydraulics of Flow in Pipes - Appurtenances – Construction Operation and maintenance – Leak Detection – Storm Water Network – Plumbing Work in Houses.

UNIT-IV COLLECTION AND CONVEYANCE OF DOMESTIC SEWAGE 9

Sewer Pipe Network – Sewage Treatment Site – Activated Sludge Process – Aeration Tank Design – Design of Secondary Settling Tank – Sludge Digester – Sludge Drying Beds – Re-Use of Treated Effluent – Selection of Pumps.

UNIT-V SOLID WASTE MANAGEMENT 9

Collection and Conveyance of Solid Wastes – Segregation of Solid Wastes – Sanitary Land Fill – Incineration – Recycling and Re-use Concepts – Disposal of Electronic Wastes.