

Syllabus for Junior Environment Engineer

	Name of the Subject	Topic Name
a)	Environmental knowledge General	<ul style="list-style-type: none"> National / International events related to the environment and common understanding of environmental processes, NGT Act, Pollution Indices. Abiotic and biotic environment, Non-renewable resources, Health hazards due to Environmental Pollution.
b)	Water / Waste Water / Industrial Engineering	<ul style="list-style-type: none"> Estimating sewage discharge, quantity of sewage per capita and its relationship per capita water supplied, design periods. Unit processes / Operations related to water and waste water treatment, namely Equalization; Coagulation; Flocculation; Settling; filtration; Disinfection; Aeration; Adsorption etc. Physical, chemical and biological characteristics of water and sewage; Activated sludge process and its modifications; treatment ponds and aerated lagoons; Trickling filters; Rotating biological contactors; Sequencing Batch reactor and Membrane Batch Reactor. Anaerobic digestion; Anaerobic filter and UASB, Nitrification & De-nitrification. Types of pumps required for pumping sewage such as, centrifugal pumps, reciprocating pumps, diaphragm pumps and pneumatic ejectors; Pumping stations – their locations and component parts. Characteristics and treatment of waste from Textile, Tannery, Dairy, Distillery, Cement Industry.
c)	Water / Waste Water / Industrial Analysis	<ul style="list-style-type: none"> Physical, chemical, and biological characteristics of water, and sewage, performance evaluation of the wastewater treatment system.
d)	Environmental Assessment Impact	<ul style="list-style-type: none"> Basic concept of Environmental Impact Assessment, Environmental Impact statement, and Environment Management Plan. Prediction and assessment of impacts on air, water, biota, noise, cultural, and socio-economic environment. Rapid and comprehensive Environmental Impact Assessment. Use of GIS in making EIA reports for industries and remote sensing and other software use in EIA studies.
e)	Environmental Legislations in India	<ul style="list-style-type: none"> Environment (Protection) Act 1986, its amendments, and various rules /notifications made therein. Environmental Impact Assessment notification, 2006-salient features. Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act 1981.
f)	Environmental Audit and Safety Audit in Industrial units	<ul style="list-style-type: none"> Environmental Audit and Safety Audit in Industrial units. On site and off site emergency plan, Disastrous management plan.
