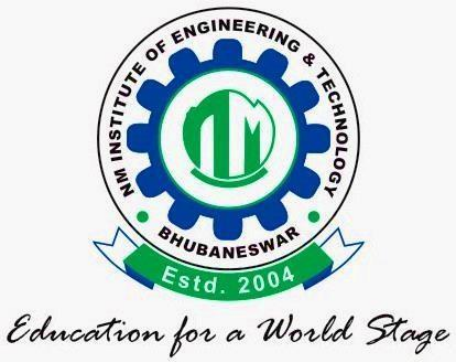
NM INSTITUTE OF ENGINEERING & TECHNOLOGY

BHUBANESWAR

CIVIL Engineering Department



LESSON PLAN

Semester: 5TH

Subject: WATER SUPPLY AND WASTE WATER ENGG

Faculty Name: SUBESH DAS

Subject: WWWE No of Days/per week class allotted: 4

Semester from date: to date: No. of Weeks: 15

Week	Class Day	Theory topics
1	1	Necessity of treated water supply
	2	Per capita demand
	3	IRC classification of roads
	4	variation in demand and factors affecting demand
2	1	Methods of forecasting population,
	2	Impurities in water
	3	– organic and inorganic, Harmful effects of impurities
	4	– physical, chemical and bacteriological
3	1	Water quality standards for different uses
	2	Surface sources
	3	Lake, stream, river and impounded reservoir
	4	aquifer type & occurrence
4	1	Infiltration gallery, infiltration well, springs, well
	2	Yield from well
	3	method s of determination, Numerical problems using yield
	4	Intakes – types, description of river intake
5	1	reservoir intake, canal intake
	2	Pumps for conveyance & distribution – types
	3	selection, installation
	4	6 Pipe materials – necessity, suitability
6	1	Pipe joints – necessity, types of joints, suitability
	2	methods of jointing Laying of pipes – method
	3	Design of treatment units excluded.
	4	Flow diagram of conventional water treatment system
7	1	Interstitials and impurities.
	2	Treatment process / units :
	3	Aeration ; Necessity
	4	Plain Sedimentation : Necessity

Signature of Faculty

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Week	Class Day	Theory topics
8	1	working principles, Sedimentation
	2	types, essential features, operation & maintenance
	3	Sedimentation with coagulation
	4	: Necessity, principles of coagulation
9	1	types of coagulants, Flash Mixer
	2	Flocculator, Clarifier (Definition and concept only)
	3	Filtration : Necessity, principles, types of filters
	4	Slow Sand Filter
10	1	Rapid Sand Filter
	2	Pressure Filter – essential features
	3	Disinfection : Necessity, methods of disinfection
	4	Chlorination – free
11	1	combined chlorine demand, available chlorine,
	2	residual chlorine
	3	pre-chlorination
	4	, break point chlorination
12	1	superchlorination
	2	Softening of water – Necessity
	3	Methods of softening – Lime soda
	4	process and Ion exchange method (Concept Only)
13	1	General requirements
	2	types of distribution system-gravity
	3	direct and combined
	4	Methods of supply – intermittent and continuous
14	1	Distribution system layout – types
	2	Valves-types
	3	, features, uses, purpose-sluice valves
	4	Maintenance of concrete roads –
15	1	check valves, air valves, scour valves,
	2	Fire hydrants,
	3	Water meters
	4	Traffic safety and traffic control signal

Signature of Faculty