

Dicipline: <b>CIVIL</b>	Semester: <b>5<sup>th</sup></b>	Name of the Teaching Faculty: <b>Panghamilica Mohapatra</b>	
Subject: <b>Water supply and waste water Engg.</b>	No of Days/Week Class Allotted: <b>05</b>	Semester From date: <b>15.09.22</b> To date: _____	No. of Weeks: <b>15</b>

WEEK	Class Day	Theory Topics
1 <sup>st</sup>	1 <sup>st</sup> 15.09.22	Introduction to water supply, Necessity of treated water supply, <del>population</del> <sup>population</sup> <del>factor</del> <sup>calculation</sup>
	2 <sup>nd</sup> 16.09.22	Per capita demand, variations in demand and factors affecting demand.
	3 <sup>rd</sup>	
	4 <sup>th</sup>	
	5 <sup>th</sup>	
2 <sup>nd</sup>	1 <sup>st</sup> 19.09.22	Impurities in water - organic & inorganic Harmful effects of Impurities.
	2 <sup>nd</sup> 20.09.22	Analysis of water - physical.
	3 <sup>rd</sup> 21.09.22	Analysis of water - chemical
	4 <sup>th</sup> 22.09.22	Analysis of water - Bacteriological
	5 <sup>th</sup> 24.09.22	Water quality standards for different uses.
3 <sup>rd</sup>	1 <sup>st</sup> 26.09.22	Sources and conveyance of water - surface sources - lake, stream, rivers etc.
	2 <sup>nd</sup> 27.09.22	Underground sources - types and occurrence Infiltration gallery & well, spring, well
	3 <sup>rd</sup> 28.09.22	Yield from well - methods of determination.
	4 <sup>th</sup> 29.09.22	Numerical problems using yield formulae.
	5 <sup>th</sup> 01.10.22	Intake - types, River Intake, Reservoir, canal.



WEEK	Class Day	Theory Topics
4th	1st 10.10.22	Pumps for conveyance & distribution - types, selection, Installation.
	2nd 11.10.22	Pipe materials - necessity, suitability, merits & demerits.
	3rd 12.10.22	Pipe joints - necessity, types, suitability, methods.
	4th 13.10.22	Treatment of water - Flow diagram of conventional water treatment system
	5th 15.10.22	Treatment process - Aeration & Necessity.
5th	1st 17.10.22	Plain Sedimentation - Necessity, working principles, sedimentation tank & types.
	2nd 18.10.22	Essential features, operation & maintenance of sedimentation tank.
	3rd 19.10.22	Sedimentation with coagulation - Necessity and principles.
	4th 20.10.22	Types of coagulants, Flash Mixer, Flocculator, clarifier.
	5th 22.10.22	Filtration - Necessity, principles & types of filter.
6th	1st 24.10.22	Rapid sand filter, slow sand filter & pressure filter.
	2nd	
	3rd 26.10.22	Chlorination - Free & combined chlorine demand, available chlorine, residual chlorine etc.
	4th 27.10.22	Break point chlorination, Super chlorination Disinfection - Necessity & methods.
	5th 29.10.22	Softening of water - Necessity & methods.



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7 <sup>th</sup>	1st 31.10.22	Distribution system - General requirements. Types of DS.		
	2nd 1.11.22	Methods of supply.		
	3rd 2.11.22	DS layout - types.		
	4th 3.11.22	Comparison, suitability of DS layout.		
	5th 5.11.22	Valves - types, features, uses.		
8 <sup>th</sup>	1st 7.11.22	purse - sluice Valves, check valves, air valves.		
	2nd 8.11.22	Gate valves, Fire hydrants, water meters.		
	3rd 9.11.22	Appurtenance in DS.		
	4th 10.11.22	W/s plumbing in building - Method of connection from water mains to building supply.		
	5th 12.11.22	General layout of plumbing arrangement - for water supply in single & double storied building.		
9 <sup>th</sup>	1st 14.11.22	Waste water Engg - Introduction, aim & objectives.		
	2nd 15.11.22	Definition of terms related to sanitary Engg.		
	3rd 16.11.22	Systems of collection of waste		
	4th 17.11.22	Conservancy and water carriage system.		
	5th 19.11.22	Feature, comparison, suitability.		



WEEK	Class Day	Theory Topics
10 <sup>th</sup>	1st 21.11.22	Quantity of sanitary sewage - domestic & industrial
	2nd 22.11.22	Variation in sewage flow & its numericals.
	3rd 23.11.22	Computation of size of sewer application of Chazy's formula.
	4th 24.11.22	Limiting velocity of flow
	5th 26.11.22	General Importance, strength of sewage
11 <sup>th</sup>	1st 28.11.22	Characteristics of sewage.
	2nd 29.11.22	Concept of sewage.
	3rd 30.11.22	Sewerage system - Types, features
	4th 1.12.22	Comparison bet <sup>n</sup> the types of sewerage & suitability.
	5th 3.12.22	Shapes of sewer - rectangular, circular
12 <sup>th</sup>	1st 5.12.22	Avoid - features, suitability.
	2nd 6.12.22	Laying of sewer
	3rd 7.12.22	Sewer appurtenances & Sewage Disposal - Manholes & lamps.
	4th 8.12.22	Types <sup>&amp; features</sup> of manholes.
	5th 10.12.22	Location & Len <sup>th</sup> of manhole.



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13	1st 12.12.22	Inlets, Grease & Oil trap.
	2nd 13.12.22	Storm regulator, inverted siphon.
	3rd 14.12.22	Disposal on land.
	4th 15.12.22	Disposal by dilution.
	5th 17.12.22	Sewage treatment - principle, flow diagram of conventional treatment.
14	1st 19.12.22	Primary treatment - Necessity & principle.
	2nd 20.12.22	Features & fun <sup>n</sup> . of primary treatment.
	3rd 21.12.22	Secondary treatment - Necessity, principle, features & fun <sup>n</sup> .
	4th 22.12.22	Sanitary plumbing for building. Requirement for building drainage.
	5th 24.12.22	Layout of lavatory blocks in residential building.
15	1st	Layout of building drainage.
	2nd	Plumbing Arrangement.
	3rd	Sanitary fixtures - Features, fun <sup>n</sup> & maintenance.
	4th	Water closets, flushing cisterns, aerinals.
	5th	Inspection chambers, traps, anti-cyphonage pipe.