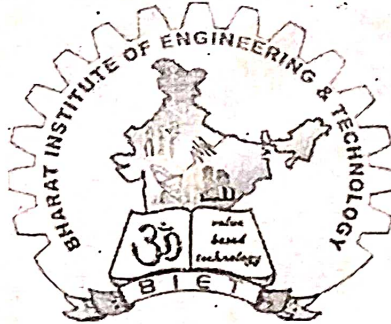


# BHARAT INSTITUTE OF ENGINEERING & TECHNOLOGY

**SIVARAM VIHAR, GHATAKESWAR HILLS  
MOHADA, BERHAMPUR (GM.)**



## STUDENT'S ATTENDANCE REGISTER

Time	9.05	10.45	1.55		
Day	9.55	11.30	2.45		
Mon		✓			
Tue	✓				
Wed					
Thu	✓				
Fri			✓		
Sat	✓				

Year/ Session : 2023 (winter)	Semester from Date: 01/08/2023 To Date : 30/11/2023
Semester & Branch	5 <sup>th</sup> sem, CPEVT
Subject with Code	Th-04 Water Supply & waste water Eng.
Name of the Faculty Member	Monalisa Panda
No of Weeks:	No of Class Allotted/Week :

# B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
			<u>SECTION- A: WATER SUPPLY</u>
August	1 <sup>st</sup>	1.08.2023	INTRODUCTION TO WATER SUPPLY, QUALITY & QUANTITY OF WATER 1.1 Necessity of treated water supply
		3.08.2023	1.2 Per Capita demand, variation in demand & factors affecting demand
		4.08.2023	1.3 Methods of forecasting population, Numerical problems using different methods.
		5.08.2023	
		7.08.2023	1.4 Impurities in water - Organic & Inorganic; Harmful effects of impurities
	2 <sup>nd</sup>	8.08.2023	1.5 Analysis of water - Physical, Chemical & bacteriological
		10.08.2023	
		11.08.2023	1.6 Water Quality standards for different uses.
		12.08.2023	
		14.08.2023	


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# B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
			<u>CHAPTER-2</u>
			<u>SOURCES &amp; CONVEYANCE OF WATER</u>
August	3 <sup>rd</sup>	17.08.2023	2.1 Surface sources - Lake, stream, rivers & impounded reservoir.
		18.08.2023	2.2. Underground sources - aquifer type & occurrence - Infiltration gallery, infiltration well, springs, well.
		19.08.2023	2.3 Yield from well - method of determination, Numerical Problems using yield formulae
	4 <sup>th</sup>	21.08.2023	2.4: Intakes - types, description of river intake, reservoir intake, canal intake
		22.08.2023	2.5 Pumps for conveyance & distribution - types, selection, installation
		24.08.2023	2.6- Pipe materials - necessity, suitability merits & demerits of each type
		25.08.2023	2.7. Pipe Joints - necessity, type of joints suitability, methods of jointing.
August		26.08.2023	Laying of pipes - method

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Month	Week	Class Day	Theory/Practical Topic
August	5 <sup>TH</sup>	28.08.2023	<p style="text-align: center;"><u>CHAPTER-3</u></p> <p style="text-align: center;"><u>TREATMENT OF WATER</u></p> <p>3.1 Flow diagram of conventional water treatment system.</p>
		29.08.2023	3.2 Treatment Process / Units:
September	1 <sup>ST</sup>	31.08.2023	- Aeration; Necessity
		1.09.2023	- Plain Sedimentation: Necessity, working principles, sedimentation tank - types, essential features, operation & maintenance
		2.09.2023	
September		4.09.2023	- Sedimentation with coagulation: Necessity
		5.09.2023	Principles of coagulation, types of
		7.09.2023	coagulants, Flash Mixer, Flocculater,
		8.09.2023	Clarifier
			- Filtration: Necessity, principles, types
			of filters; Slow sand filter, Rapid
			Sand filter & Pressure Filter - essential features.

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Month	Week	Class Day	Theory/Practical Topic
SEPTEMBER	2 <sup>nd</sup>	9.09.2023	Disinfection: Necessity, methods of disinfection
		10.09.2023	Chlorination:- free & combined chlorine demand, available chlorine, residual chlorine, pre-chlorination, break point chlorination, super-chlorination.
		12.09.2023	- Softening of water - Necessity, Methods of softening - Lime soda process & Ion exchange method.

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Month	Week	Class Day	Theory/Practical Topic
SEPTEMBER	3 <sup>rd</sup>	14.09.2023	<p style="text-align: center;"><u>CHAPTER-4</u></p> <p style="text-align: center;">DISTRIBUTION SYSTEM &amp; APPURTENANCE IN DISTRIBUTION SYSTEM :-</p> <p>4.1. General requirements, types of distribution system - gravity, direct &amp; combined</p>
		15.09.2023	
		16.09.2023	
	4 <sup>TH</sup>	18.09.2023	4.2. Methods of supply - intermittent & continuous
		21.09.2023	4.3. Distribution system layout - types, comparison, suitability
		22.09.2023	
		23.09.2023	4.4. Valves - types, features, uses, purposes - Sluice valves, check valves, air valves, scour valves, Fire hydrants, Water meters.
	25.09.2023		
	5 <sup>TH</sup>	26.09.2023	Method of connection from water mains to building supply.
		29.09.2023	- General layout of Plumbing arrangement for water supply in single storied & multi storied building as per I.S. Code

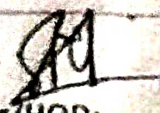
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# B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
			<b>SECTION - B</b> <u>WASTE WATER ENGINEERING</u>  <u>CHAPTER - 6</u> <u>INTRODUCTION</u>
		30.09.2023	6.1 Aims & objectives of sanitary engineering.
OCTOBER	1 <sup>st</sup>	3.10.2023	6.2 Definition of terms related to sanitary engineering.
		5.10.2023	
		6.10.2023	6.3 Systems of collection of wastes - Conservancy & Water carriage System - features, Comparison, suitability.
		7.10.2023	

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# B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
			<u>CHAPTER-7</u> <u>QUALITY &amp; QUANTITY OF SEWAGE</u>
October	2 <sup>nd</sup>	9.10.2023	7.1 Quantity of sanitary sewage - domestic & industrial sewage, variation in sewage flow, numerical problem on computation quantity of sanitary sewage
		10.10.2023	
		12.10.2023	7.2. Computation of size of sewer, application of Chezy's formula, Limiting velocities of flow; self cleaning & scouring
October		13.10.2023	
	3 <sup>rd</sup>	16.10.2023	7.3 General, importance, strength of sewage, characteristics of sewage - physical, chemical & biological
		17.10.2023	
		19.10.2023	7.4 Concept of sewage - sampling, test for solids - pH, dissolved oxygen, BOD, COD

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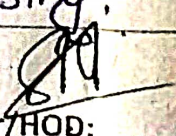
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# B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
			<u>CHAPTER-8</u>
			<u>SEWERAGE SYSTEM</u>
	4 <sup>TH</sup>	30-10-2023	8.1 Types of system-separate, combined
		31-10-2023	Partially separate, features, comparison between the types, suitability
NOVEMBER	1 <sup>ST</sup>	02-11-2023	8.2. Shapes of sewer- rectangular, circular, avoid features, suitability
		03-11-2023	8.3. Laying of sewer - setting out
		04-11-2023	sewer alignment
			<u>CHAPTER-9</u>
			<u>SEWER APPURTENANCES &amp; SEWAGE DISPOSAL</u>
		6-11-2023	9.1. Manholes & Lamp holes - types, features, location, function
	2 <sup>ND</sup>	7-11-2023	9.2. Inlets, Grease & Oil trap - features, location, function
		9-11-2023	9.3. Storm regulator, inverted siphon - features, location, function
		10-11-2023	
		11-11-2023	9.4. Disposal, on land - sewage farming, sewage application, & dosing

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# B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
NOVEMBER	3 <sup>rd</sup>	11.11.2023	Sewage sickness - Causes & remedies
		13.11.2023	9.5 Disposal by dilution - standards for disposal in different types of water bodies, self purification of stream.
		14.11.2023	
	4 <sup>th</sup>	16.11.2023	101 Principles of treatment, flow diagram of conventional treatment
		17.11.2023	
		18.11.2023	102 Primary Treatment - necessity, principles, essential features, functions
		20.11.2023	
		21.11.2023	103 Secondary treatment - necessity, principles, essential features, functions
		23.11.2023	
		24.11.2023	
24.11.2023			

## CHAPTER-10

### SEWAGE TREATMENT

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# B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
NOVEMBER	5 <sup>TH</sup>	25.11.2023	<u>CHAPTER-11</u> <u>SANITARY PLUMBING FOR BUILDING</u> 11.1 Requirements of building drainage, layout of lavatory blocks in residential buildings, layout of building drainage
November		28.11.2023	11.2 Plumbing arrangement of single storied & multi storied building as I.S. Code practice
		30.11.2023	11.3 Sanitary fixtures- features, function & maintenance & fixing of the fixtures - water closets, flushing cisterns, urinals, inspection chambers, traps anti-siphonage pipe.

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