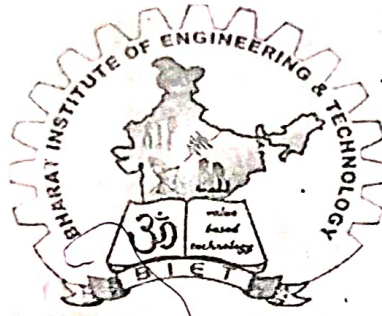


# BHARAT INSTITUTE OF ENGINEERING & TECHNOLOGY

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



## STUDENT'S ATTENDANCE REGISTER

Time	9.05	9.55	10.45		
Day	9.55	10.45	11.30		
Mon		✓			
Tues	✓				
Thurs			✓		
Fri	✓				
Sat	✓				

Year/ Session	2nd year
Semester & Branch	4th sem, Civil department
Subject with Code	Th-02 Hydraulics & Irrigation Engineering
Name of the Faculty Member	Monalisa Panda

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

Month	Week	Class Day	Theory/Practical Topic
February			<u>Part (A) (Hydraulics)</u>
		13.2.23	i) <u>Hydrostatics</u> :-
		14.2.23	ii) <u>Properties of fluid</u> :- density,
		16.2.23	Specific gravity, Surface tension,
		17.2.23	Capillarity, viscosity & their
		18.2.23	uses.
		20.2.23	iii) <u>Pressure and its measurements</u> :-
		21.2.23	intensity of pressure, atmospheric
		22.2.23	pressure, gauge pressure, absolute
		23.2.23	pressure & vacuum pressure,
February		24.2.23	relationship between atmospheric
		25.2.23	pressure, absolute pressure &
		27.2.23	gauge pressure.
February		27.2.23	iv) <u>Pressure exerted on an</u>
		28.2.23	<u>immersed surface</u> :-
			Total pressure, resultant pressure
			expression for total pressure exerted
			on horizontal & vertical
			surface.

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

Month	Week	Class Day	Theory/Practical Topic
March		2.3.23	2. <u>Kinematics of fluid flow:</u> a) Basic equation of fluid flow and their applications.
		3.3.23	→ Rate of discharge, equation of continuity of liquid flow.
		4.3.23	total energy of a liquid in motion - potential, kinetic & pressure, Bernoulli's theorem and its limitation.
March		7.3.23	→ Practical applications of Bernoulli's equation.
		9.3.23	ii) <u>Flow over notches &amp; weirs:</u>
March		10.3.23	→ Notches, weir, types of notches and weirs.
		11.3.23	discharge through different types of notches and weirs their application.
		13.3.23	
		14.3.23	iii) <u>Types of flow through the pipes:</u> - → uniform & non uniform;

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Signature of the Principal/Course Co-ordinator/HOD: *[Signature]*

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

Month	Week	Class Day	Theory/Practical Topic
March		15.3.23	laminar and turbulent, steady & unsteady, Reynold's num.
		16.3.23	ber & its application.
		17.3.23	10) Losses of head of a liquid flowing through pipes :-
		18.3.23	→ different types of major & minor losses. Simple numerical problems on losses due to friction
		20.3.23	using Darcy's equation, total energy lines & hydraulic gradient lines.
March		21.3.23	11) Flow through the open channel :-
		22.3.23	→ types of channel sections - rectangular, trapezoidal & circular, discharge formula - Chezy's and Manning's equation, Best economical section.
March		23.3.23	3. <u>Pumps</u> :- 12) Types of pumps.
		24.3.23	11) Basic principles, operation

*M. Panda*  
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# B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
March		25.3.23	discharge, horse power & efficiency of centrifugal pump.
		27.3.23	
		28.3.23	Types, operation, discharge, horse power & efficiency of reciprocating pump.
		30.3.23	
April			<u>Part - B</u> <u>Navigation Engineering</u>
			1) <u>Hydrology</u>
		3.4.23	→ Hydrology cycle
		4.4.23	→ Rainfall: types, intensity, hyetograph.
		6.4.23	→ Estimation of rainfall, rain-gauges, its types
	7.4.23	→ Concept of catchment area, types, runoff, estimation of flood discharge by Dicken's and Ryve's formula.	

M. Pandu  
Signature of the Faculty:

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

Month	Week	Class Day	Theory/Practical Topic
April			2) <u>Water requirement of crops</u> .
		8.4.23	i) Definition of irrigation, necessity benefits of irrigation, types of irrigation.
		10.4.23	ii) Crop season
		11.4.23	iii) Duty, Delta & base period their relationship, overlap allowance, Kharif & Rabi crops.
		13.4.23	iv) Gross Command area, Culturable Command area, intensity of irrigation, irrigable area, time factor, crop ratio
April			3) <u>Flow irrigation</u> .
		14.4.23	i) Canal irrigation, types of canals, loss of water in canals.
		15.4.23	ii) Perennial irrigation
		17.4.23	iii) Different components of irrigation canals & their functions.
		18.4.23	iv) Sketches of different canal cross sections.
		29.4.23	

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

Month	Week	Class Day	Theory/Practical Topic
April		20.4.23	4) Classification of canals according to their alignment, various types of canal lining & their advantages & disadvantages.
		27.4.23	4) <u>Water logging and drainage</u>
		22.4.23	i) Causes and effect of water logging.
		24.4.23	ii) Detection, prevention & remedies.
			5) <u>Diversion head works and regulatory structures</u>
April		25.4.23	i) Necessity & objectives of diversion head works, weirs & barrages.
		27.4.23	
		28.4.23	
		29.4.23	ii) General layout, functions of different parts of barrage.
May		1.5.23	
		2.5.23	iii) Siltin & scouring
		4.5.23	iv) Functions of regulatory structure.
		5.5.23	

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

Month	Week	Class Day	Theory/Practical Topic
May		6.5.23	6) <u>Cross drainage Works</u>
		8.5.23	i) Functions and necessity of
		9.5.23	Cross drainage works - aqueduct,
		11.5.23	Siphon, Super passage, level
		12.5.23	crossing.
		13.5.23	ii) Concept of each with help of
		15.5.23	neat sketch.
			7) <u>Dams</u>
		16.5.23	i) Necessity of storage <sup>reservoirs</sup>
		18.5.23	types of dams.
May		19.5.23	ii) <u>Earthen dams</u> : types, description,
		20.5.23	causes of failure & protection
			Measures.
		21.5.23	iii) <u>Gravity dam</u> : - types, description,
		22.5.23	causes of failure & protection
		Measures.	
		iv) <u>Spillways</u> : - types and	
		Necessity.	

Signature of the Faculty: M Pandey

Signature of the Principal/Course Co-ordinator/HOD: [Signature]