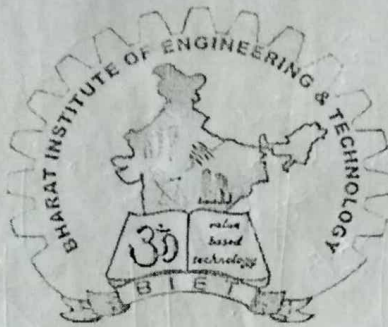


Sec D

Mar

# BHARAT INSTITUTE OF ENGINEERING & TECHNOLOGY

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



## STUDENT'S ATTENDANCE REGISTER

Time Day	9.05 - 9.55	9.55 - 10.45	10.45 - 11.35	1.05 - 1.55	
MON	Engg. math-2	Engg. math-2			
TUE		Engg math-2	Engg math-2		
WED	Engg. math-2				
FRI				Engg math-2	

Year/ Session	20.3.23 to 26.06.23
Semester & Branch	2nd semester E.T.C Branch (Sec-E)
Subject with Code	Engg. mathematics-2
Name of the Faculty Member	Sibun Jera

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

Month	Week	Class Day	Theory/Practical Topic
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">MARCH</div> <div style="text-align: center;"> <div style="margin-bottom: 10px;">↑</div> <div style="margin-top: 10px;">↓</div> </div> </div>	4th	20/09/23	(1) <u>vector Algebra</u>
		20/3/23	(a) Introduction.
		21/03/23	(b) Type of vectors (null vector, parallel vector, collinear vector)
		22/03/23	(in component form)
		23/03/23	(c) Representation of vector
		24/03/23	(d) magnitude and direction of vectors.
		27/03/23	(e) Addition and subtraction of a vectors.
		27/03/23	(f) position vector.
		28/03/23	(g) scalar product of two vectors.
		28/03/23	(h) Geometrical meaning of dot product.
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">APRIL</div> <div style="text-align: center;"> <div style="margin-bottom: 10px;">↑</div> <div style="margin-top: 10px;">↓</div> </div> </div>		31/03/23	(i) Angle between two vectors.
		3/04/23	(j) scalar and vector projection of two vectors.
		3/04/23	

Signature of the Faculty: *[Signature]*

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17.3.23

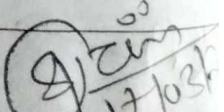
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17/03/23

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

Month	Week	Class Day	Theory/Practical Topic
APRIL	2nd	4/04/23	(K) vector product and geometrical meaning
		4/04/23	(Area of triangle and parallelogram)
	3rd	05/04/23	(2) Limits and Continuity
		10/04/23	(a) Definition of function, based on set theory.
		10/04/23	(b) Type of functions.
		11/04/23	(i) constant function.
		11/04/23	(ii) Identity function.
		11/04/23	(iii) Absolute value function.
		11/04/23	(iv) The greatest integer function.
		12/04/23	(v) Trigonometry function.
12/04/23	(vi) Exponential function.		
12/04/23	(vii) logarithmic function.		

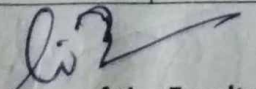
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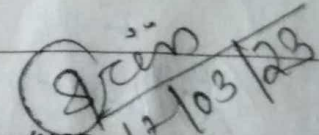
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 17/03/23

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

Month	Week	Class Day	Theory/Practical Topic
APRIL ↑ ↓	4th ↑ ↓	17/04/23	(c) Introduction of limit.
		17/04/23	(d) Existence of limit.
		18/04/23	(e) methods of evaluation of limit.
		18/04/23	(i) $\lim_{x \rightarrow 0} \frac{x^n - a^n}{x - a} = na^{n-1}$
		18/04/23	(ii) $\lim_{x \rightarrow 0} \frac{a^x - 1}{x} = \log_e a$
		19/04/23	(iii) $\lim_{x \rightarrow 0} \frac{e^x - 1}{x} = 1$
		19/04/23	(iv) $\lim_{x \rightarrow 0} (1+x)^{1/x} = e$
		19/04/23	(v) $\lim_{x \rightarrow \infty} (1 + \frac{1}{x})^x = e$
		19/04/23	(vi) $\lim_{x \rightarrow 0} \frac{\log(1+x)}{x} = 1$
		19/04/23	(vii) $\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$
		19/04/23	(viii) $\lim_{x \rightarrow 0} \frac{\tan x}{x} = 1$

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

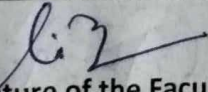
Month	Week	Class Day	Theory/Practical Topic
APRIL 	4th	21/04/23	(e) Definition of continuity of a function at a point and problems based on it.
	5th 	24/04/23	(3) <u>Derivatives</u> (a) Derivative of a function at a point.
		24/04/23	(b) Algebra of derivative -
		25/04/23	(c) Derivative of a standard function
		26/04/23	$x^n, a^x, \log_a x, e^x, \sin x, \cos x, \tan x$
MAY 	7th 	28/04/23	$\cot x, \operatorname{cosec} x, \operatorname{sec} x, \operatorname{csc}^2 x, \operatorname{cosec}^2 x,$
		1/05/23	$\tan^2 x, \cot^2 x, \operatorname{cosec}^2 x, \operatorname{sec}^2 x.$
		1/05/23	

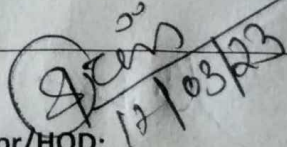
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# B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
↑ MAY ↓	1st	21/05/23	(d) Derivative of composite function (chain Rule)
		21/05/23	
	2nd	31/05/23	(e) method of differentiation of. (i) parametric function. (ii) Implicit function. (iii) logarithmic function. (iv) A function with respect to another function.
		8/05/23	
		8/05/23	
		9/05/23	
		9/05/23	
		10/05/23	
		12/05/23	
	3rd	15/05/23	(f) Application of Derivatives. (i) successive Differentiation (up to 2nd order) (ii) partial differentiation (function of 2 variable up to 2nd order)
		15/05/23	
		16/5/23	
		16/05/23	
			17/05/23

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12/05/23

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

Month	Week	Class Day	Theory/Practical Topic
<div style="display: flex; align-items: center; justify-content: center;"> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100%; width: 20px;"></div> <div style="margin: 0 10px; text-align: center;"> <span style="font-size: 2em;">↑</span>  <span style="font-size: 2em;">↓</span> </div> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100%; width: 20px;"></div> </div> <p style="margin-top: 10px; text-align: center;">MAY</p>	4th	22/05/23	(4) <u>Integration</u> :- (a) Definition of integration as inverse of differentiation.
	4th	22/05/23	(b) Integral of standard functions
	4th	23/05/23	(c) method of integration
	4th	24/05/23	(i) Integration by substitution.
	4th	26/05/23	(ii) Integration by parts.
5th	29/05/23	(d) Integration of the following forms. (i) $\int \frac{dx}{x^2+a^2}$ , (ii) $\int \frac{dx}{x^2-a^2}$ (iii) $\int \frac{dx}{a^2-x^2}$ , (iv) $\int \frac{dx}{\sqrt{x^2+a^2}}$	

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17/03

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

Month	Week	Class Day	Theory/Practical Topic
<div style="display: flex; align-items: center; justify-content: center;"> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; margin: 0 10px;"></div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold;">MAY</div> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; margin: 0 10px;"></div> </div>	<div style="display: flex; align-items: center; justify-content: center;"> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; margin: 0 10px;"></div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold;">5th</div> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; margin: 0 10px;"></div> </div>	24/05/23	(v) $\int \frac{dx}{\sqrt{x^2-a^2}}$ (vi) $\int \frac{dx}{\sqrt{a^2-x^2}}$
		30/05/23	(vii) $\int \frac{dx}{x\sqrt{x^2-a^2}}$ (viii) $\int \sqrt{a^2-x^2} dx$
		30/05/23	(ix) $\int \sqrt{a^2+x^2} dx$ , (x) $\int \sqrt{x^2-a^2} dx$
<div style="display: flex; align-items: center; justify-content: center;"> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; margin: 0 10px;"></div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold;">JUNE</div> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; margin: 0 10px;"></div> </div>	<div style="display: flex; align-items: center; justify-content: center;"> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; margin: 0 10px;"></div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold;">2nd</div> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; margin: 0 10px;"></div> </div>	31/05/23	(e) Definite integral , property of definite integrals.
		02/06/23	(i) $\int_0^a f(x) dx = \int_0^a f(a-x) dx$
		05/06/23	(ii) $\int_a^b f(x) dx = -\int_b^a f(x) dx$
		05/06/23	(iii) $\int_a^c f(x) dx = \int_a^b f(x) dx + \int_b^c f(x) dx, a < b < c$
			(iv) $\int_{-a}^a f(x) dx = 0$ if $f(x) = \text{odd}$ . $= 2 \int_0^a f(x) dx$ if $f(x) = \text{even}$ .

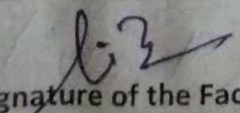
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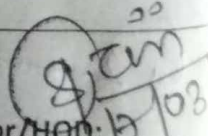
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# B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
↑ JUNE ↓		05/06/23	(f) Application of integration.
		06/06/23	(i) Area enclosed by curve and X-axis.
			(ii) Area of a circle with centre at origin.
			<u>(5) Differential Equations</u>
		06/06/23	(a) order and degree of a differential equation.
		07/06/23	
		09/06/23	(b) solution of differential equation.
		12/06/23	(i) 1st order and 1st degree equation by the method of Separation of variables.
		13/06/23	
		13/06/23	
	16/06/23		
	19/06/23		
	19/06/23		

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

Month	Week	Class Day	Theory/Practical Topic	
<div style="display: flex; flex-direction: column; align-items: center;"> <span style="font-size: 2em;">↑</span>  <span style="font-size: 1.5em;">JUNE</span>  <span style="font-size: 2em;">↓</span> </div>	<div style="display: flex; flex-direction: column; align-items: center;"> <span style="font-size: 1.5em;">↑</span>  <span style="font-size: 1.2em;">4th</span>  <span style="font-size: 1.5em;">↓</span> </div>	21/06/23	(ii) Linear equation  $\frac{dy}{dx} + py = Q$ where, P, Q are function of x.	
		23/06/23		
		<div style="display: flex; flex-direction: column; align-items: center;"> <span style="font-size: 1.5em;">↑</span>  <span style="font-size: 1.2em;">5th</span>  <span style="font-size: 1.5em;">↓</span> </div>	26/06/23	
			26/06/23	

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