

# BHARAT INSTITUTE OF ENGINEERING & TECHNOLOGY

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



## STUDENT'S ATTENDANCE REGISTER

Time	9:05	9:55	11:35	12:25	
Day	to 9:55	to 10:45	to 12:25	to 1:15	
Mon	EC-11				
Tue					
Wed				EC-11	
Thu		EC-11			
Fri			EC-11		
Sat					

Year/ Session : 2023 (winter)	Semester from Date: 01/08/2023 To Date : 30/11/2023
Semester & Branch	5th sem, Electrical Engg.
Subject with Code	EC-11, Th-2
Name of the Faculty Member	Prof. M.R. NAHAK / ER. S.K. Choudhury.
No of Weeks:	No of Class Allotted/Week : 4







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

Month	Week	Class Day	Theory/Practical Topic
↑ AUGUST ↓	<u>5th</u>	28/8/23	<u>Synchronous Method.</u> <u>Unit-2</u> 2.1 Constructional feature of Synchronous motor.
		31/8/23	2.2 principle of operation, concept of load angle.
↑ SEPTEMBER ↓	<u>1st</u>	1/9/23	2.3 Derive torque, power developed.
	<u>2nd</u>	4/9/23	2.4 Effect of varying load with constant excitation.
		7/9/23	2.5 Effect of varying excitation with constant load.
		8/9/23	2.6 power angle characteristics of cylindrical rotor motor.
			2.7 Explain effect of excitation on Armature current and power factor.
			2.8 Hunting in synchronous motor.

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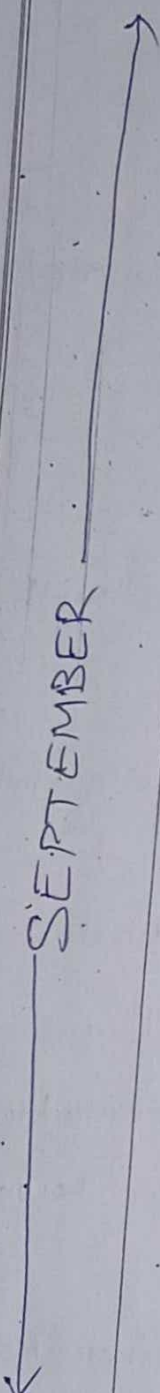
Signature of the Principal/Course Co-ordinator/HOD:

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31/8/23

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

Month	Week	Class Day	Theory/Practical Topic
SEPTMBER 	<u>3<sup>rd</sup></u>	1/9/23	<u>2.9</u> Function of Damper bars and in synchronous Motor, and Generator.
		13/9/23	<u>2.10</u> Describe method of starting of synchronous Motor.
			<u>2.11</u> State application of synchronous Motor.
			<u>Three phase Induction Motor</u> <u>unit-8</u>
		14/9/23	<u>3.1</u> Production of Rotating Magnetic field.
	15/9/23	<u>3.2</u> Constructional Feature of Squirrel cage and slip-Ring Induction Motor.	

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

Month	Week	Class Day	Theory/Practical Topic
SEPT ↑ ↓	<u>4th</u>	18/9/23	$\underline{3.3}$ working principle of $\phi$ IM.
		21/9/23	$\underline{3.4}$ Define slip speed, slip and establish the relation between slip and rotor quantities.
	22/9/23	$\underline{3.5}$ Derive expression for torque during starting and running condition and derive condition for maximum torque.	
	25/9/23	$\underline{5th}$ (Solve Numerical problems)	
	27/9/23	$\underline{3.6}$ Torque-Slip characteristics	
		28/9/23	$\underline{3.7}$ Derive relation between full load torque and starting torque, etc. (Solve Numerical problems.)

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

Month	Week	Class Day	Theory/Practical Topic
↑ OCTOBER ↓	<u>1st</u>	4/10/23	<u>3.8</u> Establish the relation between Rotor copper loss, rotor $\phi$ , Gross torque and relationship of slip with rotor copper loss and solve 1 numerical problems.
		5/10/23	
		6/10/23	<u>3.9</u> methods of starting and different types of starters used for starting of 3 $\phi$ IM.
	<u>2nd</u>	9/10/23	<u>3.10</u> Explain Speed control by Voltage control, rotor resistance control and pole changing and Frequency control methods.
		11/10/23	
		12/10/23	<u>3.11</u> plugging as applicable to 3 $\phi$ IM.

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

Month	Week	Class Day	Theory/Practical Topic
↑ OCTOBER ↓			<u>3.12</u> Describe different types of Motor enclosures.
		13/10/23	<u>3.13</u> Explain principle of Induction generator, and state its applications.  <u>Single phase Induction Motor.</u>
	<u>3rd</u>	16/10/23	<u>4.1</u> Explain Ferranti's principle.
		18/10/23	<u>4.2</u> Explain double revolving field theory, and cross field theory to analyze starting torque of $\Delta$ IM.
	<u>5th</u>	19/10/23	<u>4.3</u> Explain working principle, torque-speed characteristics, performance characteristics, and
		30/10/23	

Unit-4

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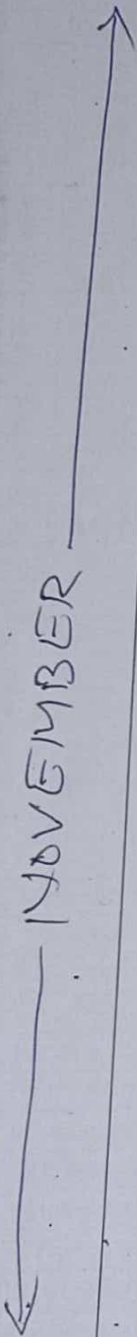
# B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
↑ NOVEMBER ↓	<u>1st</u>	1/11/23	application of following single phase motors.
		2/11/23	1) Split phase motor.
		3/11/23	2) Capacitor motor.
	<u>2nd</u>	6/11/23	3) Capacitor start, capacitor Run motor.
		8/11/23	4) permanent capacitor type motor.
		9/11/23	5) shaded pole motor.
			4.4 Explain the methods to change the direction of rotation of above motor.
			<u>Commutator Method</u> unit-5
			5.1 Construction, working principle, Running characteristics and application of 1 $\phi$ series motor.

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

Month	Week	Class Day	Theory/Practical Topic
NOVEMBER 	<u>3rd</u>	10/11/23	<u>5.2</u> construction, working principle and application of universal motor.
		13/11/23	<u>5.3</u> working principle of Repulsion start
		15/11/23	1 Motor, repulsion start Induction Run motor, repulsion Induction Motor.
	<u>Special Electrical machine</u> unit-6		
	<u>4th</u>	16/11/23	<u>6.1</u> principle of stepper motor.
17/11/23		<u>6.2</u> classification of stepper motor.	
20/11/23		<u>6.3</u> principle of variable reluctance stepper motor.	
		20/11/23	<u>6.4</u> principle of permanent magnet stepper motor.

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*S. K. Choudhury*  
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# 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="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; margin-right: 10px;">NOVEMBER</div> <div style="text-align: center;"> <span style="font-size: 2em;">↑</span>  <span style="font-size: 2em;">↓</span> </div> </div>		22/11/23	<u>6.5</u> principle of Hybrid stepper Motor. <u>6.6</u> Application of stepper motor. <u>3<math>\phi</math> Transformer</u> <u>unit-7</u>
		23/11/23	<u>7.1</u> Explain Grouping of winding, advantages.
		24/11/23	<u>7.2</u> Explain parallel operation of 3 $\phi$ T/R.
	<u>5th</u>	29/11/23	<u>7.3</u> Explain Tap-changer. (ON-OFF load tap changing)
		30/11/23	<u>7.4</u> Maintenance Shedule of Power T/R.

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*S. K. Choudhury  
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