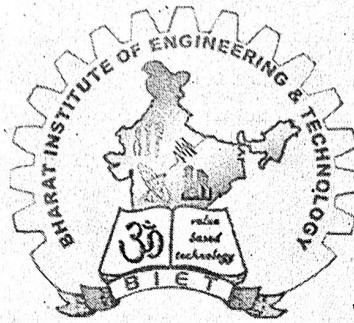


# BHARAT INSTITUTE OF ENGINEERING & TECHNOLOGY

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



## STUDENT'S ATTENDANCE REGISTER

Time	<del>10:45</del>	12:25	1:55		
Day	9:55 10:45	1:15	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	3rd Sem, mechanical Engg.
Subject with Code	EM
Name of the Faculty Member	Er. Sambhosh Kumar Nayak
No of Weeks:	No of Days per Week Class Allotted :

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

Month	Week	Class Day	Theory/Practical Topic
<u>Aug 23</u>	<u>1st</u>	<u>01/08</u>	<u>1.0</u> Engineering materials and their properties
			1.1. material classification into ferrous and non-ferrous category and alloys.
		<u>03/08</u>	1.2. properties of materials, physical Mechanical and chemical
		<u>04/08</u>	1.3. performance requirements;
		<u>05/08</u>	1.4. Material reliability and safety.
	<u>2nd</u>	<u>08/08</u>	<u>2.0</u> Ferrous materials and Alloys
			2.1. Characteristics and application of ferrous materials.
		<u>10/08</u>	2.2. Classification, composition and application of low carbon steel medium carbon steel and high
		<u>12/08</u>	2.2. Carbon steel
	<u>3rd</u>	<u>14/08</u>	2.3. Alloy steel: Low alloy steel high alloy steel, tool steel and stainless steel,

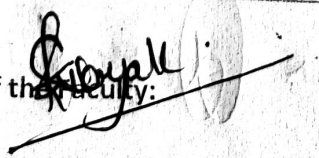
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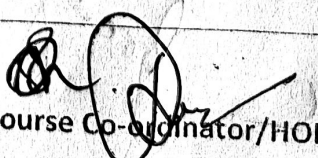
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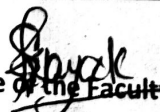
Month	Week	Class Day	Theory/Practical Topic
		18/08	2.4. Tool steel: effect of various alloying elements such as Cr, Mn, Ni, V; Mo.
	<u>4th</u>	21/08	<u>3.0 Iron-Carbon system</u> 3.1. concept of phase diagram and cooling curves.
		23/08	3.2. Features of Iron-Carbon diagram with salient micro-constituents of iron and steel.
<u>SEP-23</u>	<u>1st</u>	01/09	<u>4.0 Crystal Imperfections</u> 4.1. Crystal defines, classification of crystal, ideal crystal and crystal imperfections.
		02/09	4.2. Classification of imperfection point defects line defects surface defects

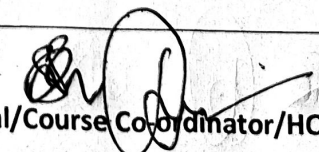
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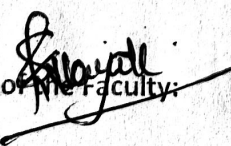
Month	Week	Class Day	Theory/Practical Topic
			<p>volume defects</p> <p>04/09 <u>4.3.</u> Types and causes of point defects                      vacancies                      interstitials                      impurities</p>
	<u>2nd</u>	06/09	<p><u>4.4.</u> Types and causes of line defects                      edge dislocation                      screw dislocation</p>
		08/09	<p><u>4.5.</u> Effect of imperfection on material properties</p>
		09/09	<p><u>4.6</u> Deformation by slip and twinning</p> <p><u>4.7.</u> Effect of deformation on material properties.</p>
	<u>3rd</u>	11/09	<p><u>5.0.</u> Heat Treatment</p>
		12/09	<p>5.1. Purpose of Heat treatment</p> <p>5.2. process of Heat treatment.</p>

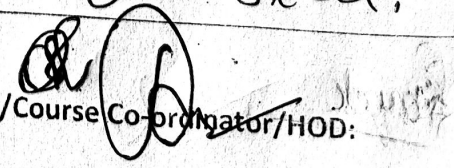
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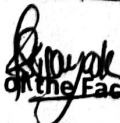
Month	Week	Class Day	Theory/Practical Topic
		15/09	Annealing Normalizing
	<u>4th</u>	25/09	Hardening Tempering
		28/09	Stress relieving measures.
<u>Oct-23</u>	<u>1st</u>	02/10	5.3. Surface hardening Carburizing
		04/10	Nitriding
		06/10	5.4. Effect of heat treatment on properties of steel.
		07/10	5.5. Hardenability of steel.

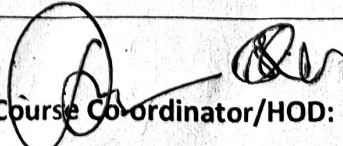
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# B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
	<u>2nd</u>	09/10  11/10	<p><u>6.0</u> , <u>Non-ferrous Alloys</u></p> <p>6.1. Aluminum alloys.</p> <ul style="list-style-type: none"> <li>- Composition.</li> <li>- property and usage of</li> <li>- Duralmin,</li> <li>- γ-alloy.</li> </ul>
	<u>3rd</u>	13/10  18/10	<p>6.2. Copper alloys;</p> <ul style="list-style-type: none"> <li>- Composition,</li> <li>- property of usage of Copper aluminum</li> <li>- Copper-tin</li> <li>- Babbitt</li> <li>- Phosphorous bronze</li> <li>- brass</li> <li>- Copper-Nickel.</li> </ul>

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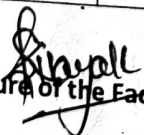
Month	Week	Class Day	Theory/Practical Topic
		18/10	<p><u>6.3.</u> predominating elements of lead alloys,</p> <ul style="list-style-type: none"> <li>- zinc alloys</li> <li>- Nickel alloys</li> </ul>
		19/10	<p><u>6.4.</u> Low alloy materials like</p> <ul style="list-style-type: none"> <li>- P-91</li> <li>- P-22 for power plant and other high temperature services.</li> <li>- High alloy materials like stainless steel grades of duplex</li> <li>- Super duplex materials etc</li> </ul>

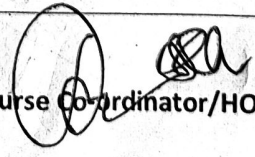
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# B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
<u>Nov 23</u>	1st	01/11	<u>7.0</u> <u>Bearing Material</u>  <u>7.1.</u> classification - Composition - Properties and uses of Copper base - Tin base - Lead base - Cadmium base bearing materials
		03/11	
	2nd	04/11	<u>8.0</u> <u>Spring Materials</u>  <u>8.1.</u> classification - Composition - Properties and uses of Iron base and Copper base Spring material

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

Month	Week	Class Day	Theory/Practical Topic
	<u>2nd</u>	15/11	<p><u>9.0. Polymers</u></p> <p><u>9.1. properties and application of thermosetting and thermoplastic polymers</u></p>
		17/11	<p><u>9.2. properties of elastomers.</u></p>
	<u>4th</u>	20/11	<p><u>10.0. Composites and ceramics</u></p>
		22/11	<p><u>10.1. Classification,</u></p> <ul style="list-style-type: none"> <li>- Composition</li> <li>- properties and uses of particulate based</li> </ul>
		24/11	<ul style="list-style-type: none"> <li>- fiber reinforced Composites</li> </ul>
		24/11	<p>10.2 - Classification and uses of Ceramics.</p>

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