

<b>Dicipline:</b>	MINING	<b>Semester:</b> 4th	<b>Name of the Teaching Faculty:</b>	
<b>Subject:</b> ELECTRICAL EQUIPMENT IN MINES		No of Days/Week Class Allotted: _____	Semester From date: _____ To date _____	No.of Weeks:
<b>WEEK</b>	<b>Class Day</b>	<b>Theory Topics</b>		
<b>1</b>	<b>1st</b>	Introduction of Electrical cables for Mining use.		
	<b>2nd</b>	Classification of cables for mining use.		
	<b>3rd</b>	Constructional features of high tension and low-tension cables armored & trailing cables and their size of cables & their use.		
	<b>4th</b>	Constructional features of high tension and low-tension cables armored & trailing cables and their size of cables & their use.		
	<b>5th</b>			
<b>2</b>	<b>1st</b>	Discussion on procedures of cable laying at surface, underground roadway & in shafts.		
	<b>2nd</b>	Discussion on procedures of cable laying at surface, underground roadway & in shafts.		
	<b>3rd</b>	Description on cable joint box mining type.		
	<b>4th</b>	Introduction to electrical Protective Systems, Fuses, Circuit breakers.		
	<b>5th</b>			
<b>3</b>	<b>1st</b>	Explaining of Fuse Materials & rewirable Fuse.		
	<b>2nd</b>	Explaining of HRC Fuse, Uses of Fuse.		
	<b>3rd</b>	Description of Air Circuit Breaker.		
	<b>4th</b>	Description of Minimum Oil Circuit Breaker (MOCB).		
	<b>5th</b>			

<b>WEEK</b>	<b>Class Day</b>	<b>Theory Topics</b>
<b>4</b>	<b>1st</b>	Description of Bulk Oil Circuit Breaker (BOCB).
	<b>2nd</b>	Description of Air Blast Circuit Breaker.
	<b>3rd</b>	Description of SF6 Circuit Breaker.
	<b>4th</b>	Description of essential qualities of a good protective system.
	<b>5th</b>	
<b>5</b>	<b>1st</b>	Description on types of relays (plunger, induction & direction over current, over loads, no volt and latching relay, frequency relay and Earth leakage relay)
	<b>2nd</b>	Description on types of relays (plunger, induction & direction over current, over loads, no volt and latching relay, frequency relay and Earth leakage relay)
	<b>3rd</b>	Description on protection of transformer by differential relay.
	<b>4th</b>	Study on general principle of working-basis remote control circuit & various protective devices of Gate-End Box.
	<b>5th</b>	
<b>6</b>	<b>1st</b>	Study on general principle of working-basis remote control circuit & various protective devices of Gate-End Box.
	<b>2nd</b>	Description on functions & operation of drill panel.
	<b>3rd</b>	Earthing system in mines & Voltage limit.
	<b>4th</b>	Introduction to Transformer.
	<b>5th</b>	Explanation on construction & principle of operation of centrifugal flow fans.

<b>WEEK</b>	<b>Class Day</b>	<b>Theory Topics</b>
7	1st	Transformer – Working Principle.
	2nd	Description to Construction Transformer.
	3rd	Study on Types of Transformers.
	4th	Study on Types of Transformers.
	5th	
8	1st	E.M.F Equation of a Transformer.
	2nd	Voltage Transformation Ratio (K).
	3rd	Applications of a transformer.
	4th	Applications of a transformer.
	5th	
9	1st	Explaining starting & running characteristics of D.C. & A.C. Motors.
	2nd	Explain starting & running characteristics of D.C. & A.C. Motors.
	3rd	Selection of motors for mining use.
	4th	Selection of motors for mining use.
	5th	

<b>WEEK</b>	<b>Class Day</b>	<b>Theory Topics</b>
<b>10</b>	<b>1st</b>	Introduction to Electric brakes used in Mines.
	<b>2nd</b>	Introduction to Electric brakes used in Mines.
	<b>3rd</b>	Description of the regenerative braking.
	<b>4th</b>	Description of the regenerative braking.
	<b>5th</b>	
<b>11</b>	<b>1st</b>	Explaining magnetic braking.
	<b>2nd</b>	Explaining magnetic braking.
	<b>3rd</b>	Defining of flame proof apparatus.
	<b>4th</b>	Defining of flame proof apparatus.
	<b>5th</b>	
<b>12</b>	<b>1st</b>	Defining of intrinsically safe apparatus.
	<b>2nd</b>	Defining of intrinsically safe apparatus.
	<b>3rd</b>	Describing the safety features of flame proof & intrinsically safe apparatus.
	<b>4th</b>	Describing the safety features of flame proof & intrinsically safe apparatus.
	<b>5th</b>	

<b>WEEK</b>	<b>Class Day</b>	<b>Theory Topics</b>
<b>13</b>	<b>1st</b>	Describing signals & shaft signal.
	<b>2nd</b>	Describing communication system in U/G mines
	<b>3rd</b>	Study on Point to point communication.
	<b>4th</b>	Introduction to Intercom system/Telephone & cordless system.
	<b>5th</b>	
<b>14</b>	<b>1st</b>	Introduction to Intercom system/Telephone & cordless system.
	<b>2nd</b>	Introduction Sensors & their applications.
	<b>3rd</b>	Description to Battery locomotive, Automation.
	<b>4th</b>	Thyroster control, Elecrical LHD, Electric mine phone.
	<b>5th</b>	
<b>15</b>	<b>1st</b>	Thyroster control, Elecrical LHD, Electric mine phone.
	<b>2nd</b>	
	<b>3rd</b>	
	<b>4th</b>	
	<b>5th</b>	