

Discipline	Semester	Name of the Teaching faculty
Mech Engg.	5 <sup>th</sup>	Narayan Nath
Subject	No. of Days Per week class allotted	Semester From date :- 15/09/2022 To date :- 21/01/2023
THU- MENE Machinery-I	04	No. of weeks :- 15
Week	Class Day	Theory
1 <sup>st</sup>	1 <sup>st</sup>	Definition of wire ropes and types of wire ropes used in mines
	2 <sup>nd</sup>	Constructional features of wire ropes
	3 <sup>rd</sup>	Law of wire ropes
	4 <sup>th</sup>	Definition of Factor of Safety (FOS) to wire ropes nominal
2 <sup>nd</sup>	1 <sup>st</sup>	Actual factor of safety of wire ropes
	2 <sup>nd</sup>	Factors influencing the FOS.
	3 <sup>rd</sup>	Efficiency of rope construction, space factor & sectional area rope
	4 <sup>th</sup>	Factors affecting deterioration of ropes
3 <sup>rd</sup>	1 <sup>st</sup>	Care & maintenance of ropes
	2 <sup>nd</sup>	Testing & examination of wire ropes
	3 <sup>rd</sup>	The procedure of splicing of wire rope
	4 <sup>th</sup>	Rope capel for haulage winding & reeving.

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3<sup>th</sup> 1<sup>st</sup> Definition of ROPE HAULAGE  
 2<sup>nd</sup> Transportation in mines by ROPE haulage  
 3<sup>rd</sup> TYPES OF ROPE HAULAGE (Direct ROPE haulage)  
 4<sup>th</sup> head & tail ROPE haulage, Endless ROPE haulage

5<sup>th</sup> 1<sup>st</sup> Gravity ROPE haulage  
 2<sup>nd</sup> various types of ROPE haulage with sample sketches

3<sup>rd</sup> -do-  
 4<sup>th</sup> -do-

5<sup>th</sup> 1<sup>st</sup> Different types of safety devices on ROPE haulage roadways (stop blocks)  
 2<sup>nd</sup> Buffers, Back catch, Pointer plate, Drop catch, Age catch device, Back stop or dog.  
 3<sup>rd</sup> Runways switches, Jazzy rail, Retarders and stoppers, Approach warning devices signalling arrangement.

4<sup>th</sup> Different types of coupling used in ROPE haulage.

5<sup>th</sup> 1<sup>st</sup> Different types of clips used in ROPE haulage  
 2<sup>nd</sup> -do-

Head gear	3 <sup>rd</sup>	Definition of head gear
	4 <sup>th</sup>	function of head gear
	5 <sup>th</sup>	
	1 <sup>st</sup>	Constructional features of headgear pulley
	2 <sup>nd</sup>	-do-
	3 <sup>rd</sup>	Definition of Angle of feet
Cage and shaft fitting	4 <sup>th</sup>	Cage, cage suspension gear function, safety catch at headgear & kops
	5 <sup>th</sup>	
	1 <sup>st</sup>	Detaching hooks function, safety catch
	2 <sup>nd</sup>	Types of guide
	3 <sup>rd</sup>	-do-
	4 <sup>th</sup>	Rigid guide, flexible shoes
	10 <sup>th</sup>	
	1 <sup>st</sup>	guide rope suspension & tensioning arrangement.
winding drum	2 <sup>nd</sup>	Definition of winding drum
	3 <sup>rd</sup>	Different profiles of winding drum
	4 <sup>th</sup>	Definition of winding brake
	11 <sup>th</sup>	
	1 <sup>st</sup>	Different types of winding brake
	2 <sup>nd</sup>	Various types of safety devices on winding system.

	3 <sup>rd</sup>	various types of safety devices on winding system.
Friction winding	4 <sup>th</sup>	Definition of Friction winding
12 <sup>th</sup>	1 <sup>st</sup>	Principle & constructional features of ground mounted KOPPE winding
	2 <sup>nd</sup>	Principle & constructional features of tower mounted
	3 <sup>rd</sup>	Advantages & disadvantages of KOPPE winding
	4 <sup>th</sup>	Multidrop system of KOPPE winding.
13 <sup>th</sup>	1 <sup>st</sup>	Definition of SKIP winding
	2 <sup>nd</sup>	constructional features of bottom discharge skip.
	3 <sup>rd</sup>	
	4 <sup>th</sup>	constructional features of top discharge skip.
14 <sup>th</sup>	1 <sup>st</sup>	
	2 <sup>nd</sup>	Comparison of skip winding & cage winding.
Pit top & Pit bottom circuit layout	3 <sup>rd</sup>	Definition of pit top circuit layout
	4 <sup>th</sup>	Factors affecting pit top layout
15 <sup>th</sup>	1 <sup>st</sup>	Definition of pit bottom circuit layout.

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2nd

Factors Abstracting P1 + bottom layouts.

3rd

Different types of P1 + top & P1 + bottom  
 case/tech circuit layout.

4th

→ do -