

**SYNERGY POLYTECHNIC, BHUBANESWAR**  
**(DEPARTMENT OF MINING ENGINEERING)**  
**(LESSON PLAN 5<sup>TH</sup> Sem )**

<b>Discipline:</b> Mining Engr.	<b>Semester:</b> 5 <sup>TH</sup>	<b>Name of the Teaching Faculty:</b> Hrudananda Pradhan
<b>Subject:</b> Th.4 M.M-I	<b>No of days/per week class allotted:</b> 4	<b>Semester from Date:</b> <b>to Date:</b> <b>No of weeks:</b>
<b>Week</b>	<b>Class/ Day</b>	<b>Theory/ Practical Topics</b>
1 <sup>st</sup>	1 <sup>st</sup>	Describe the features, types, construction, uses and maintenance of wires
	2 <sup>nd</sup>	Constructional features of wire ropes and lay of wire ropes, Factor of safety
	3 <sup>rd</sup>	Nominal and actual factor of safety of wire ropes, Factors influencing the F.O.S, Efficiency of rope construction
	4 <sup>th</sup>	-do-
2 <sup>nd</sup>	1 <sup>st</sup>	Describe Wire ropes used in Mines
	2 <sup>nd</sup>	-do-
	3 <sup>rd</sup>	Efficiency of rope construction, space factor, cross sectional area rope.
	4 <sup>th</sup>	-do-
3 <sup>rd</sup>	1 <sup>st</sup>	Explain cross sectional area rope. Factors affecting deterioration of ropes
	2 <sup>nd</sup>	-do-
	3 <sup>rd</sup>	Care and maintenance of ropes, Testing and examination of wire ropes.
	4 <sup>th</sup>	Rope capel for haulage winding and recapping
4 <sup>th</sup>	1 <sup>st</sup>	Describe different types of rope haulage.
	2 <sup>nd</sup>	-do-
	3 <sup>rd</sup>	Transportation in mines by rope haulage,
	4 <sup>th</sup>	Types of rope haulage, Safety devices on rope haulage roadways,
5 <sup>th</sup>	1 <sup>st</sup>	-do-
	2 <sup>nd</sup>	- Different types of clips and couplings
	3 <sup>rd</sup>	State functions of headgear. Describe constructional features of headgear pulley.
	4 <sup>th</sup>	-do-
6 <sup>th</sup>	1 <sup>st</sup>	Cage, cage suspension gear, detaching hooks, safety catch at headgear and keps,
	2 <sup>nd</sup>	Types of guide, Rigid guide, flexible shoes, guide rope suspension and tensioning arrangement.
	3 <sup>rd</sup>	-do-
	4 <sup>th</sup>	Different profiles of winding Drum,

Sign of Faculty

Head of Dept.

Principal

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(LESSON PLAN 5<sup>TH</sup> Sem 2023-24)

Discipline: Mining Engr.	Semester: 5 <sup>TH</sup>	Name of the Teaching Faculty: Hrudananda Pradhan
Subject: Th.4 M.M-I	No of days/per week class allotted: 4	Semester from Date:                      to                      Date: No of weeks:
Week	Class/ Day	Theory/ Practical Topics
7 <sup>th</sup>	1 <sup>st</sup>	Different types of winding brake,
	2 <sup>nd</sup>	-do-
	3 <sup>rd</sup>	Various types of safety devices on winding system.
	4 <sup>th</sup>	
8 <sup>th</sup>	1 <sup>st</sup>	Principle and constructional features of ground-mounted and tower-mounted koepe winder
	2 <sup>nd</sup>	-do-
	3 <sup>rd</sup>	-do-
	4 <sup>th</sup>	-do-
9 <sup>th</sup>	1 <sup>st</sup>	Advantages & disadvantages of koepe winding. Multirope system of koepe winding.
	2 <sup>nd</sup>	-do-
	3 <sup>rd</sup>	Constructional features bottom discharge skip, Top discharge skip, Skip winding and cage winding.
	4 <sup>th</sup>	-do-
10 <sup>th</sup>	1 <sup>st</sup>	-do-
	2 <sup>nd</sup>	-do-
	3 <sup>rd</sup>	Factors affecting pit top and pit bottom 6 11 layouts, Different types of pit top and pit bottom car/tub circuit layouts.
	4 <sup>th</sup>	-do-
11 <sup>th</sup>	1 <sup>st</sup>	Draw various arrangements of pit top and pit bottom layouts.
	2 <sup>nd</sup>	-do-
	3 <sup>rd</sup>	-do-
	4 <sup>th</sup>	Describe different profiles of winding drum and types of friction winding.
12 <sup>th</sup>	1 <sup>st</sup>	-do-
	2 <sup>nd</sup>	-do-
	3 <sup>rd</sup>	Describe constructional and safety features of cage and shaft fittings
	4 <sup>th</sup>	-do-
13 <sup>th</sup>	1 <sup>st</sup>	-do-
	2 <sup>nd</sup>	-do-

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