



SYNERGY SCHOOL OF ENGINEERING
DEPARTMENT OF ELECTRICAL ENGINEERING

Discipline: Electrical Engineering	Semester: - 5 th Sem EE	Name of the teaching faculty: - SUNANDITA SAHOO
Subject: - ELECTRICAL EQUIPMENT IN MINES	No. of Days/week class Allotted: - 3	No. of weeks: -15 SESSION-2026-2027 WINTER Starting date- 01. 07. 2026 Closing date- 05. 07. 2026
No. of week	No. of class	Topic to be Taught
1	1 ST	Electrical cables for Mining use: Cables for mining use
	2 ND	Constructional features of high tension and low-tension cables armored and trailing cables
	3 RD	Constructional features of high tension and low-tension cables armored and trailing cables
2	1 ST	Size of cables and their use
	2 ND	State procedures of cable laying at surface
	3 RD	State procedures of cable laying at surface
3	1 ST	underground roadway and shafts
	2 ND	Cable joint box mining type
	3 RD	Cable joint box mining type
4	1 ST	Protective Systems: Fuses, Fuse Materials, Rewireable Fuse, HRC Fuse., Uses of Fuse
	2 ND	Circuit Breakers, Air Circuit Breaker
	3 RD	Minimum Oil Circuit Breaker (MOCB)
5	1 ST	Minimum Oil Circuit Breaker (MOCB),
	2 ND	Bulk Oil Circuit Breaker (BOCB),
	3 RD	SF6 Circuit Breaker Essential qualities of a good protective system
6	1 ST	Types of relays -plunger induction and direction over current
	2 ND	over loads, no volt and latching relay
	3 RD	frequency relay and earth leakage relay
7	1 ST	Protection of transformer by differential relay
	2 ND	Remote control circuit and various protective devices of Gate-End Box
	3 RD	Drill panel, Earthing system in mines, Voltage limit.
8	1 ST	Transformer: Fundamentals of Transformer, purpose
	2 ND	Working principle of Transformer.
	3 RD	Industrial drives- Mining type: Starting and running characteristics of D.C. and A.C. Motors
9	1 ST	Industrial drives- Mining type: Starting and running characteristics of D.C. and A.C. Motors
	2 ND	Industrial drives- Mining type: Starting and running characteristics of D.C. and A.C. Motors
	3 RD	Selection of motors for mining use.
10	1 ST	Electric braking used in Mines
	2 ND	Regenerative braking

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02.06.2026.



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11	3 RD	Magnetic braking.
	1 ST	Underground signaling arrangement: Signals and shaft signal, Communication system in U/G mines, Point to point communication, Intercom system/Telephone, Cordless system.
	2 ND	Signals and shaft signal
	3 RD	Communication system in U/G mines
12	1 ST	Communication system in U/G mines
	2 ND	Point to point communication
	3 RD	Point to point communication
13	1 ST	Intercom system/Telephone
	2 ND	Intercom system/Telephone
	3 RD	Cordless system
14	1 ST	Sensors and their applications: Battery locomotive
	2 ND	Battery locomotive
	3 RD	Automation with Thyristor control
15	1 ST	Automation with Thyristor control
	2 ND	Electrical LHD,
	3 RD	Electric mine phone

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02.06.2026
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