GOVERNMENT POLYTECHNIC DARLIPALI, SUNDARGARH
ସରକାରୀ ବହୁବୃତ୍ତି ଅନୁଷ୍ଠାନ ଦର୍ଲିପାଲି, ସୁନ୍ଦରଗଡ
GOVERNMENT OF ODISHA | ଓଡିଶା ସରକାର
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LESSON PLAN

Discipline: Mining Engineering			Semester: 4th		Name of the Teaching faculty: Ghanshyam Dhurua
Subject: Underground Coal Mining Subject Code: MIEPE202 (TH:4)(A)			No of Days/Week class allotted: 3		Semester from Date: 22/12/2025 to 18/04/2025 No of weeks: 16 No. of Period Avaliable: 45
Month	**Week**	**No of periods avaliable**	**Class Day**	**Unit**	**Theory topics to be covered**
DEC	1	2P	1	I	Introduction to syllabus & Subject Intro to Underground Coal Mining: Different methods of mining.
			2	I	Bord & Pillar (B.P) Method: Introduction and various applications.
	2	3P	3	I	B.P. Layouts: Various layouts of Bord & Pillar method.
			4	I	Depillaring: Methods with stowing and caving.
JAN			5	I	Depillaring Precautions: Against fire and water during/after depillaring.
	3	3P	6	I	Machinery in B.P: Various machineries used in working face.
			7	I	Complex Conditions: Working contiguous seams; working above/below goaved areas.
			8	I	Review Unit I: Advantages and disadvantages of Bord & Pillar method.
	4	3P	9	II	Longwall Method: Introduction to Advancing and Retreating methods.
			10	II	Longwall Faces: Single unit and double unit face concepts.
			11	II	Longwall Operations: Cyclic and non-cyclic L/W layouts.
	5	2P	12	II	Mechanized Longwall (1): Working with Armoured Flexible Conveyor (AFC).
			13	II	Mechanized Longwall (2): Shield support systems.
	6	2P	14	II	Mechanized Longwall (3): Shearer Loader operation.
			15	II	Class Test-1 & Review Unit II: Summary of Longwall layouts and machinery.
FEB	7	3P	16	III	Thick Seam Mining: Definition, challenges, and introduction.
			17	III	Slicing Methods: Layouts of horizontal slicing.
			18	III	Slicing Methods: Layouts of incline slicing.
	8	3P	19	III	Blasting Gallery Method: Concept and layout.
			20	III	Sublevel Caving: Concept and layout.
			21	III	Horizon Mining: Introduction, conditions, and advantages.
	9	3P	22	III	Horizon Mining Layout: Layout of Horizon Mining.
			23	III	Horizon Mining Analysis: Disadvantages and limitations.
			24	III	Review Unit III: Comparison of thick seam methods.

	10	3P	25	IV	Stowing: Hydraulic stowing methods.
			26	IV	Stowing: Pneumatic stowing methods.
			27	IV	Roof Control: Properties of various types of roof & roof behaviour.
MAR	11	3P	28	IV	Pressure Arch Theory: Application in B.P. and Longwall working.
			29	IV	Testing: Testing of roof.
			30	IV	Support Systems: Introduction to support systems in Mines construction.
	12	3P	31	IV	Support Operation: Principle of operation and application.
			32	IV	Load Bearing: Load bearing capacity assessment of supports.
			33	IV	Class Test-2 & Review Unit IV: Assessment on Stowing and Support.
	13	3P	34	V	Subsidence: Angle of draw, Factors of subsidence.
			35	V	Subsidence Areas: Critical area of extraction, Factors affecting subsidence.
			36	V	Subsidence Control: Precautionary measures against damage, Shaft pillar.
	14	2P	37	V	Shaft Sinking: Vertical shaft vs Inclined shaft.
			38	V	Shaft Parameters: Shape and size of shaft, location of shaft.
APR	15	3P	39	V	Sinking Methods (1): Sinking through normal ground.
			40	V	Sinking Methods (2): State shaft plumbing.
			41		Difficult Ground (1): Sinking through difficult ground: Cementation. (2)Freezing method.
			42	V	Advanced Sinking: Mechanized shaft sinking.Shaft Modification: Sinking upward, widening, and deepening of shafts.
	16	3P	43	V	VST-1
			44	V	VST-2
			45	V	Revision & Previous year question & answer discussion

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