

**GOVERNMENT POLYTECHNIC JAIPUR**  
**DEPARTMENT OF MINING ENGINEERING**  
**LESSON PLAN (WINTER-2025)**

Discipline: <b>MINING</b>	Semester: 5th	Name of the Teaching faculty: <b>Prabhudutta Mishra</b>
Subject: <b>UNDERGROUND METAL MINING</b>	No of Days/Week class allotted: <b>4</b>	Semester from Date: <b>14/07/25</b> To Date: <b>15/11/25</b> No of weeks: <b>15</b>
<b>Week</b>	<b>Class Day</b>	<b>Topics</b>
<b>1st</b>	<b>1st</b>	i) Lesson plan, Syllabus ii) Importance of this Course, Course Outcomes iii) Exams, Class Tests, Introduction to the course.
	<b>2nd</b>	Classify modes of entries – Adits, applicability of entries.
	<b>3rd</b>	Classify modes of entries – inclines ,applicability of entries.
	<b>4th</b>	Classify modes of entries – shafts ,applicability of entries.
<b>2nd</b>	<b>1st</b>	Explain formation of blocks of mineral deposit.
	<b>2nd</b>	Explain level interval.
	<b>3rd</b>	Explain level interval.
	<b>4th</b>	Describe Open raising method
<b>3rd</b>	<b>1st</b>	Describe Two compartment method
	<b>2nd</b>	Describe Two compartment method
	<b>3rd</b>	Describe Jora raise lift.
	<b>4th</b>	Describe Jora raise lift.
<b>4th</b>	<b>1st</b>	Describe Long hole drilling method./Vertical Crater retreat (VCR) method
	<b>2nd</b>	Describe Long hole drilling method./Vertical Crater retreat (VCR) method
	<b>3rd</b>	Describe Alimak raise climber
	<b>4th</b>	Describe Alimak raise climber
<b>5th</b>	<b>1st</b>	Describe Raise borer.
	<b>2nd</b>	<b>CLASS TEST</b>
	<b>3rd</b>	Describe Raise borer.
	<b>4th</b>	Describe Development of Ore passe system.
<b>6th</b>	<b>1st</b>	Describe Development of Ore passe system.
	<b>2nd</b>	comparative study between coal and metal Mining.
	<b>3rd</b>	Classify stoping methods with application
	<b>4th</b>	Factors affecting methods of stoping.
<b>7th</b>	<b>1st</b>	Preparatory arrangement for stoping.
	<b>2nd</b>	Describe the Open stoping methods with layout.
	<b>3rd</b>	Describe the Open stoping methods with layout.
	<b>4th</b>	Describe the Open stoping methods with layout.
<b>8th</b>	<b>1st</b>	Describe the Open stoping methods with layout.
	<b>2nd</b>	Describe the Open stoping with pillar support.
	<b>3rd</b>	Describe the Open stoping with pillar support.
	<b>4th</b>	Describe the Shrinkage stoping methods with layout.
<b>9th</b>	<b>1st</b>	Explain Cut & fill stoping methods with layout.
	<b>2nd</b>	Explain Cut & fill stoping methods with layout.

9th	3rd	Explain Square set stoping methods with layout.
	4th	<b>INTERNAL EXAMINATION</b>
10th	1st	Explain Square set stoping methods with layout.
	2nd	Explain Block caving methods with layout.
	3rd	Explain Sub-level caving methods with layout.
	4th	Explain Top slicing methods with layout.
11th	1st	Explain Top slicing methods with layout.
	2nd	Describe conventional methods of drifting. Find out direction gradient of drift.
	3rd	Describe drilling and blasting, support, transportation, drainage, ventilation in mechanised method of drifting.
	4th	Describe lighting arrangements, organization and supervision in mechanised method of drifting.
12th	1st	Explain causes and prevention of rock burst.
	2nd	Explain causes and prevention of rock burst.
	3rd	Describe use of jumbo drill with air leg.
	4th	Describe use of jumbo drill with air leg.
13th	1st	Describe Loading & Transportation System of L.H.D.
	2nd	Describe Loading & Transportation System of L.P.D.T. (Low Profile Dump Truck)
	3rd	Describe Loading & Transportation System of rocker shovel.
	4th	Describe Loading & Transportation System of spiral chutes
14th	1st	Describe Loading & Transportation System of draw points
	2nd	Describe Loading & Transportation System of Scraper.
	3rd	Describe Loading & Transportation System of Scraper.
	4th	REVISION/DOUBT CLEARING CLASS
15th	1st	REVISION/DOUBT CLEARING CLASS
	2nd	REVISION/DOUBT CLEARING CLASS
	3rd	REVISION/DOUBT CLEARING CLASS
	4th	REVISION/DOUBT CLEARING CLASS

#### Learning Resources

Sl. No.	Title of the Book	Name of Authors
1	SME Mining Engineering Hand Book Vol.I & II- 1993 edition.	
2	Metal Mining	Chacharker
3	Mining Engineering Hand Book	Peele
4	EMT Vol.II	D.J.Desmukh
5	Mining Ground control	Prof. B.S. Verma
6	Rock Mechanics	Jugger & Cook
7	Rock Mechanics	Jermic
8	Metalliferous Mining	Higam
9	Underground Mining Method	Bullock

  
 Signature of faculty