

GOVERNMENT POLYTECHNIC, GARIYABAND

DEPARTMENT OF MINING ENGINEERING LESSON PLAN

Session: Jan-June 2025

Session start date: 01.02.2025

Subject Name- Mine Surveying-I

Name of Subject teacher- Niraj Kumar Kaiwartya

Course Code: 2039471(039)

Lecture plus Tutorial/Week- 04

Lecture No.	No. & Name of chapter	Topic/Subtopics to be covered under this unit	No. of period planned	Planned Date	Date of Execution	Remarks
1-2	Unit-01 Levelling	Introduction Basic terminology related with levelling: e. Level surfaces, Horizontal & vertical surfaces, Datum and Bench Marks Reduced Level, Rise, Fall, Line of collimation, Axis of Telescope, Axis of bubble tube, Station, Back sight, Fore sight, intermediate sight, Change point, Height of instruments, Focusing lensparallax, etc.	02	01/02/25 03/02/25	01, 03, 04 05/02/25	RC 07/04/25

3-4	Unit-01 Leveling	Types of Level- Dumpy Level, Tilting Level, Auto Level, Digital Level	02	04, 05/02/25	07/02/25	RC
5-6		Components of Auto level with neat sketch	02	10/02/25	10/02/25	14/02/25
7-8		Types of Leveling Staffs Self-reading staff & Target staff	02	07/02/25 10/02/25	13/04/02/25	
9-12		Temporary and permanent adjustment of Level Instruments.	04	13, 14 02/25	17, 18/02/25	
13-14	Classification of Leveling Simple Leveling, Differential Leveling, Fly Leveling, Profile Leveling, Reciprocal Leveling and Precise Leveling	02	17, 18, 19, 20/02/25	19, 20, 21, 22 02/20/25		
	Examples & methods of finding out the R.L. in Level Book by H.L. Method and Rise & Fall Method with necessary checking procedure.	02	21/02/25	22, 25/02/25	2 classes	
	Correction for Curvature and refraction and related example.	02				
	Errors in Leveling leveling instruments and their removal through calibration of instruments.					
	Determination of sensitivity of bubble tube.					

15-16	Unit-02 Theodolite	Introduction to Theodolite Definitions and various technical terms related to Theodolite. Uses of Theodolite	02	25, 27/04/25	27/02/25 28/02/25 28/03/25	RC 10/03/25
17-18		Sketch and describe the Transit Vernier Theodolite Graduation system of a vernier Theodolite 10 sec, 20 sec least count Reading of main and vernier scale on horizontal and vertical plate	02	29/02/25 01/03/25	04/03/25 05/03/25	RC 17/03/25
19-20		Temporary adjustment of a Theodolite Permanent adjustment of Theodolite (Fundamental axis of Theodolite and their relationship)	02	04, 05/03/25	06/07/03/25	
21-23		Methods of measuring horizontal angles and vertical angles— Ordinary, repetition and reiteration method	03	06, 07, 08/03/25	11, 12/03/25 18/03/25	
24-26		Use Theodolite for measuring a magnetic bearing, prolong a line, ranging a line	03	10/11, 12 /03/25	19, 20, 21/03/25	
27-28		Measuring direct and deflection angles Errors in Theodolite work and calibration of Theodolite in laboratory.	02	13, 15/03/25	28/03/25 01/04/25	RC 07/04/25

29-30	Unit-03 Contouring	Introduction and purpose of contouring. Horizontal equivalent Contour interval	02	17/18/03/25	02/04/25	
31-33		Factors affecting contour interval Characteristics of contours.	03	19, 20, 21 <u>03/25</u>	03/04/25 04/04/25	
34-36		Method of contouring- 3.1 Direct, 3.6.2 Indirect method	03	22, 23, <u>28/03/25</u>	08/09, <u>11/04/25</u>	
37-40		Interpolation of contours methods- i) Estimation method ii) Arithmetical method iii) Graphical method	04	29/03/25 01, 02, <u>03/04/25</u>	15, 16, 17 <u>04/25</u>	
41-42		Plotting of contour maps. Uses of contour on mine plans	02	<u>09, 05/04/25</u>	<u>19, 21/04/25</u>	

43-44	Unit-04 Dip, Strike and Bore Hole Problems	Definitions Purposes of bore hole surveying.	02	08/09/04/25	06/05/25 17/05/25	1
45-47		Relation between true dip, apparent dip and angle between them.	03	11/12, 15 04/25	08/09, 19/05/25	07/07/25 RC
48-50	Unit-04 Dip, Strike and Bore Hole Problems	Numerical problem on dip, strike and borehole surveying.	03	14/04/25 17/04/25 19/04/25	14/15/05/25 08/07/25	RC 14/07/25
51-54		Remote sensing- Introduction, Application of advances in remote sensing in various mining activities like GPS, GIS etc.	04	21, 22, 23 24/04/25	05/07/25 10/07/25 15/16/07/25	
55-57	Unit-05 Tacheometry	Introductions Stadia Diaphragm and its Principle.	03	26, 28, 29 04/25	22, 23/04/25	
58-59		Theory of analytical lens	02	01/05/25 02/05/25	24, 25/04/25	
60-62	Unit-05 Tacheometry	Determination of multiplying and additive constant and distance and elevation formulae.	03	05/05/25 07/05/25 10/05/25	29, 30/04/25 01/05/25	
63-64		Tacheometric survey	02	14, 15/05/25	02/05/25 03/05/25	
Total Class			64	64	63	

Signature of subject teacher

