SYNERGY SCHOOL OF ENGINEERING, DHENKANAL

LESSON PLAN

SESSION(2025-26)

Discipline: Mining engineering	**Semester:** 3rd ,Winter/2025	**Name of the Teaching Faculty:** Biswambar Majhi, Lecturer **Email ID:**biswambarmajhikjr@gmail.com
Subject: Mine Survey-I Total Week:-15 Nos	**No of Days/Week:**03	**Start Date:** 14/07/25 **End Date:** 15/11/25

WEEK	CLASS DAY	THEORY TOPICS
1ST	1ST	Give survey conventional signs, abbreviation used.
	2ND	Give standards of lining, inking and coloring.
	3RD	Describe selection of scales used.
2ND	1ST	Explain principle of chain surveying.
	2ND	Describe instruments used and checking their correctness.
	3RD	Explain ranging and chaining of a line. Calculate errors in chaining.
3RD	1ST	Explain obstruction while chaining.
	2ND	Explain chaining along a sloping ground. Describe use of line ranger.
	3RD	Describe use of line ranger and checking optical square for correctness.
4TH	1ST	Describe offsets and their measurements.
	2ND	Give reference sketches of stations.
	3RD	Give procedure of chain surveying.
5TH	1ST	Explain field booking. Plotting of chain survey.
	2ND	Describe prismatic compass, its adjustments and use.
	3RD	Explain magnetic meridian, grid line meridian and arbitrary meridian.
6TH	1ST	Explain true meridians.
	2ND	Explain magnetic meridian, grid line meridian and arbitrary meridian.
	3RD	Explain W.C.B. and Q.B. and conversion from one to other.
7TH	1ST	Find out fore and back bearing and their conversion.
	2ND	Compute angles from bearing and bearing angles.
	3RD	Define local alteration. Determine local alteration and necessary correction to the bearing.

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	1ST	Explain closed and open compass surveying and its plotting.
	2ND	Give procedure of field booking in compass and chain traverses.
	3RD	Explain adjustment of closing error in compass traversing.
9TH	1ST	Describe surveyor compass (miner's dial), its adjustment and use.
	2ND	Compare prismatic compass with surveyor compass.
	3RD	Fundamentals of Plane Table Survey. Explain two point problems.
10TH	1ST	Explain three point problems and its solution by tracing paper method.
	2ND	Describe advantages of plane table.
	3RD	Explain methods of determining areas.
11TH	1ST	Find out areas from offset to a base line using Mid ordinate rule.
	2ND	Find out areas from offset to a base line using Average ordinate rule.
	3RD	Find out areas from offset to a base line using Trapezoidal rule.
12TH	1ST	Find out areas from offset to a base line using Simpson's rule.
	2ND	Compute area by Planimeter and from graph paper.
	3RD	Define benchmark M.S.L., Dumpy level.
13TH	1ST	Adjust dumpy level, modern levels (Auto Level & etc.), and precise staff.
	2ND	Describe methods of leveling - Rise & fall method, height of instrument.
	3RD	Errors in ordinary leveling. Explain reciprocal leveling, subsidence leveling, setting out gradient.
14TH	1ST	Trigonometric leveling, geometrical leveling, and physical leveling.
	2ND	Classify reserves. Evaluate reserves by exploratory.
	3RD	Calculate primary ore reserve by material balance method.
15TH	1ST	Calculate primary ore reserve by decline curve method.
	2ND	Describe temporary and permanent adjustment of Theodolite.
	3RD	Describe the principles of operation & describe different parts. Describe setting of the instrument & Traversing with Theodolite.

10/07/25
Signature of Faculty

11/07/25
PRINCIPAL
Synergy School of Engineering
Dhenkanal

10/07/25
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