

DEPARTMENT OF MINING ENGINEERING
LECTURE PLAN

Course: III Semester B.Tech

Session: 2019-20

Semester: Monsoon

Subject: **MINE SURVEYING-I (MEC – 13102)**

Subject Teacher: **Dr Patitapaban Sahu**

L– T – P: **3 – 0 – 0**

Topic	No of Lectures
Surveying: Definition, objective, classification and principles of surveying	01
Linear Measurement: Instruments for measuring distances; Ranging and taping survey lines; Chain surveying – principle, field work, off-sets, booking and plotting, obstacles in taping.	07
Angular Measurement: Bearing of lines; Rectangular coordinate system; Essentials of the micro-optic theodolite; Measurement of horizontal and vertical angles; Temporary and permanent adjustments; Theodolite traversing; Computation of co-ordinates; Adjustment of traverse; Temporary and permanent adjustments.	10
Levelling: Definition & terminology; Levelling instruments types - tilting, auto set and digital levels; Levelling staves; Different types of levelling - differential, profile, Cross-sectional and reciprocal levelling; Booking and reduction methods; Underground levelling; Temporary and permanent adjustments of levels.	08
Total Station: Principle of electronic measurement of distance and angles; construction and working with Total Station; Errors; Application and recent developments in Total Station.	03
Plane Table Surveying: Methods	03
Contours: Concepts; Characteristics of contour; Contour Interval; Methods of contouring and uses of contours.	04
Computation of areas and volumes	03

LIST OF REFERENCE BOOKS

1. Surveying, S K Duggal, Vol. 1&2.
2. Surveying, B.C. Punmia, Vol. I & II.
3. Ghatak, S., Mine Surveying and Levelling, Vol. I, II, III.

Note:

1. *The question paper would comprise of 50% of average level, 30% of moderate level and 20% of high difficulty level. 50% numerical problems would be given.*
2. *Evaluation schemes are as follows: (i) 80% weightage in mid-semester and end-semester examinations. The proportion in mid-semester and end-semester will be 4:6 (ii) 20% weightage in quizzes, attendance, case studies, assignment, etc.*

(P Sahu)
Assistant Professor/ME