

Lesson Plan on Land Survey Practice -I(4TH Sem/S-24)

Total Contact Hours: 105 Hours

Weekly Duration: 7 Hours/Week

Total Duration: 15 Weeks

Faculty – MANORANJAN PATRA and DHANRAJ ROHIDAS

Week	Hours	Topic / Practical Exercise	Details of Activities
Week 1	7 Hrs	Linear Measurements, Chaining and Chain Surveying	Introduction to surveying, instruments used in chain surveying. Testing and adjustment of metric chain. Measurement of distance between two points using chain with direct ranging. Preparation of field book.
Week 2	7 Hrs	Chain Surveying Practical	Setting out different types of triangles using chain and tape. Measurement of distance across sloping ground using stepping method and clinometer. Calculation of horizontal distance.
Week 3	7 Hrs	Chaining Across Obstacles & Offset Measurement	Measurement of distance across obstacles: pond, building and stream/river. Setting perpendicular offsets using tape, cross-staff and optical square. Comparison of accuracy.
Week 4	7 Hrs	Chain Surveying Completion	Setting oblique offsets from chain line using tape. Conducting chain survey of a given plot. Field observations, booking and plotting of chain survey.
Week 5	7 Hrs	Angular Measurement and Compass Surveying	Testing and adjustment of prismatic compass and surveyor's compass. Measurement of bearings of lines and determination of included angles.
Week 6	7 Hrs	Compass Surveying	Setting out triangles using compass. Setting out closed traverse of 5 sides using prismatic compass. Recording observations in field book.
Week 7	7 Hrs	Chain and Compass Traverse	Conducting chain and compass traverse survey of given plots. Collection of field data, plotting traverse and checking accuracy.
Week 8	7 Hrs	Map Reading, Cadastral Maps & Nomenclature	Study of direction, scale, grid reference and grid square. Study of signs and symbols. Understanding cadastral map preparation

Week 9	7 Hrs	Plane Table Surveying	methodology, parcel identification and control points. Setting up plane table. Plotting points by radiation method. Plotting inaccessible points by intersection method. Locating objects in the field.
Week 10	7 Hrs	Plane Table Traversing & Resection	Conducting plane table survey by traversing method. Five-sided traverse and locating objects. Solving two-point and three-point resection problems.
Week 11	7 Hrs	Theodolite Surveying	Study and temporary adjustment of theodolite. Measurement of horizontal angles by repetition and reiteration methods. Comparison of accuracy.
Week 12	7 Hrs	Theodolite Traversing	Prolonging straight line using theodolite. Determination of magnetic bearing of given lines. Setting out closed traverse of 6 sides and checking error of closure.
Week 13	7 Hrs	Open Traverse & levelling	Setting out open traverse of 5 sides. Plotting traverse and checking closure error. Temporary adjustment of levels. Determination of reduced levels of points.
Week 14	7 Hrs	Levelling and Contouring	Difference of levels between points using level instrument. Fly leveling by height of collimation and rise & fall method. Profile leveling along road/canal alignment.
Week 15	7 Hrs	Contour Surveying, Aerial Photography & Photogrammetry Basics	Locating contour points, block level survey, contour map preparation. Map interpretation. Study of aerial photographs, focal length, scale, DEM/DTM, ortho image generation and applications of photogrammetry.

Faculty Civil: _____

M. Patil
11/1/24

HOD Civil: _____

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