

For Syllabus, Question Papers, Notes & many More

CE6304 SURVEYING I

DETAILED SYLLABUS

UNIT I FUNDAMENTALS AND CHAIN SURVEYING

Definition- Classifications - Basic principles- Equipment and accessories for ranging and chaining – Methods of ranging - well conditioned triangles – Errors in linear measurement and their corrections - Obstacles - Traversing – Plotting – applications- enlarging the reducing the figures – Areas enclosed by straight line irregular figures- digital planimetre.

UNIT II COMPASS AND PLANE TABLE SURVEYING

Compass – Basic principles - Types - Bearing - Systems and conversions- Sources of errors - Local attraction - Magnetic declination- Dip-Traversing - Plotting - Adjustment of closing error – applications - Plane table and its accessories - Merits and demerits - Radiation - Intersection - Resection – Traversing- sources of errors – applications.

UNIT III LEVELLING

Level line - Horizontal line - Datum - Bench marks -Levels and staves - temporary and permanent adjustments – Methods of levelling - Fly levelling - Check levelling - Procedure in levelling - Booking -Reduction - Curvature and refraction - Reciprocal levelling – Sources of Errors in levelling- Precise levelling - Types of instruments - Adjustments - Field procedure

UNIT IV LEVELLING APPLICATIONS

Longitudinal and Cross-section-Plotting - Contouring - Methods - Characteristics and uses of contours – Plotting – Methods of interpolating contours – Computations of cross sectional areas and volumes - Earthwork calculations - Capacity of reservoirs - Mass haul diagrams.

UNIT V THEODOLITE SURVEYING

Theodolite - Types - Description - Horizontal and vertical angles - Temporary and permanent adjustments – Heights and distances– Tangential and Stadia Tacheometry – Subtense method - Stadia constants - Anallactic lens.

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TEXT BOOKS

1. Chandra A.M., "Plane Surveying", New Age International Publishers, 2002.
2. Alak De, "Plane Surveying", S. Chand & Company Ltd., 2000.

REFERENCES

1. James M. Anderson and Edward M. Mikhail, "Surveying, Theory and Practice", 7th Edition, McGraw Hill, 2001.
2. Bannister and S. Raymond, "Surveying", 7th Edition, Longman 2004.
3. Roy S.K., "Fundamentals of Surveying", 2nd Edition, Prentice Hall of India, 2004.
4. Arora K.R., "Surveying Vol I & II", Standard Book house, 10th Edition 2008.

OBJECTIVES

To introduce the principles of various surveying methods and applications to Civil Engineering projects.