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 **Elementary engineering surveying.**Author(s) : [Ghosh, J. K.](#)

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Editors : [Ghosh, J. K.](#)Book : [Elementary engineering surveying](#) 2010 pp.xi + 310 pp.

Abstract : The book contains 11 chapters and one appendix. Chapter 1 is intended to provide the background and fundamental information required to delve into the subject through further chapters. It deals with the introduction to the basics of surveying and mapping followed by an overview of surveying and Map making and a short Survey of India topographic maps. Chapter 2 discusses the fundamentals of measurements and its manipulation for further calculation. It includes how to

fundamental measurement gets propagated as error in calculated parameter. Chapter 3 discusses the criteria of acceptance or rejection of surveying observations/measurement. Chapter 2 explains methods, problems, mistakes and errors/corrections in direct measurement of distance. Further, it discusses the instrument, principle, errors, problems in electronic distance measurement. Chapter 4 discusses the instruments including adjustments and operations, different methods, measurements, calculation of leveling. Further, it explains the different types of errors and mistakes associated with leveling, their sources, propagation and minimization. Chapter 5 explains the use of contours and their graphical representation followed by engineering applications. Chapter 6 discusses the fundamentals involved in finding out the relative distance through measurement of horizontal and vertical angles. It also explains the methods, their adjustments and operations, methods of measurements and the errors associated with measurements. Chapter 7 discusses indirect methods of surveying for determination of horizontal distance and vertical elevation known as tacheometry. Chapter 8 discusses the basic definition, fundamental theory, field procedures and computations for the determination of absolute direction of a line based on field astronomy. Chapter 9 discusses in detail involved in establishment and plotting of horizontal control point by traverse surveying. It includes the steps of traverse surveying, computations, independent coordinates determination and procedure for plotting of stations followed by applications of traverse. Chapter 10 explains a field method of surveying and mapping for details known as plane table surveying. It explains the instruments, principle, methods and errors involved in plane table surveying. Chapter 11 discusses the fundamentals, geometry, methods and computations for setting out different types of route alignment. Further, for animated and color figures, students are encouraged to visit the NPTEL web course Surveying available at <http://nptel.iitm.ac.in/courses/Webcourse-contents/IIT-ROORKEE/SURVEYING>. Answers of many problems present in the exercise of the book are also available in the web course. To summarize, this book provides a logically arranged sequence of topics that best suits in carrying out engineering field surveying work. It is an introductory book that can be fruitfully useful to all spheres of students enrolled for first year engineering survey.

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