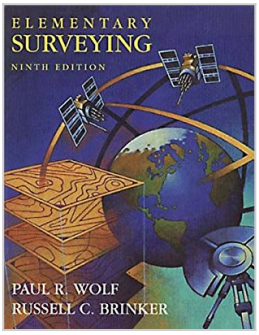

Elementary Surveying

By Paul R. Wolf, Russell C. Brinker

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The ninth edition of Paul Wolf and Russell Brinker's best-selling text, Elementary Surveying, has been substantially revised so that students are informed of the latest technological developments in both field and office work. A highly readable introduction to the field of surveying (and past winner of the National Award for Excellence), this textbook emphasizes the theory of errors and correlation of theory and practical field methods. To remind students that surveyors must constantly strive to reduce the sizes of errors and eliminate mistakes, lists of typical errors and mistakes are given at the end of most chapters.

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Elementary Surveying By Paul R. Wolf, Russell C. Brinker Bibliography

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Editorial Review

From the Back Cover

Elementary Surveying has been the best selling surveying text for many years. The authors continue to focus on the text's readability and clear presentation of basic concepts and practical material in each of the areas fundamental to the practice of surveying (geomatics). Although the book is elementary, its depth and breadth have made it suitable for self study, and for use as a reference by those engaged in the practice of surveying and its related disciplines such as civil engineering, forestry, geography, geology, landscape architecture, and others. As with past editions, this text continues to emphasize the presence of errors in surveying, while practical suggestions resulting from the authors' many years of experience are interjected throughout the book.

This tenth edition of *Elementary Surveying (An Introduction to Geomatics)* has been substantially updated and modified to reflect the rapidly changing nature of surveying (geomatics). Many additions and changes have been made to keep this the most up-to-date textbook available in surveying.

New to the tenth edition:

- Expansion of GPS coverage into two chapters.
- Contains an in-depth treatment of the subject in both the theory of GPS and field and office procedures in GPS.
- Relevant website links given throughout the book.
- Enables students to self-explore topics discussed in the book and obtain the latest material on surveying standards.
- **New Wolfpack CD included with the book.**
- Contains computer programs for solving the different types of surveying problems, and includes help files as well as sample data files.
- Modernized discussions and graphics.
- Describes the new instruments currently being used in industry, introductory geodetic calculations, coordinate geometry, new state plane coordinate computation procedures, etc.
- Every chapter contains a new set of problems, and a revised and updated bibliography.

This *Elementary Surveying: An Introduction to Geomatics, Tenth Edition* has been updated to reflect the changing nature of modern surveying practice—currently often referred to as "geomatics." Since this new term is now generally accepted in English-speaking countries worldwide, and is consistent with modern practice as currently evolving in the United States, it is an appropriate addition to the book's title. It is hoped this new edition will not only serve the needs of its traditional surveying and engineering users, but that it will also be suitable for the expanding audience of spatial data users in various other disciplines.

Written primarily for freshman and sophomore students at the college level, the authors have endeavored to present a readable text that presents basic concepts and practical material in each of the areas fundamental to modern surveying (geomatics) practice. Although the book is elementary, its depth and breadth also make it ideal for self study. This tenth edition includes more than 400 figures and illustrations to help clarify discussions, and numerous example problems are worked to illustrate computational procedures.

The order of chapters in the book has been reorganized to better accommodate schedules followed in most surveying laboratories, particularly those in northern climates. Thus, the material on leveling has been presented ahead of distance measurement by taping and electronic methods. Discussions of total station instruments and angle measurements follow these topics. Recognizing the increasing importance of the global positioning system (GPS), this subject has been ;.moved forward in the chapter sequence to follow total station instruments and o; angle measurements. Also the GPS coverage has been expanded into two chapters—Chapter 13 introduces the principles of GPS operation, and Chapter 14 discusses field and office procedures in using the equipment. The subjects of leasts-quares adjustments and coordinate geometry have been upgraded and moved from the appendix into separate chapters in the main text. This is consistent with the increasing importance of these two topics, which have become so vital in connection with both GPS and geographic information systems (GIS).

In keeping with the goal of providing an up-to-date presentation of surveying equipment and procedures, total stations are stressed as the instruments for making angle and distance measurements. Transits and theodolites, which are now only rarely used in practice, are just briefly introduced in the main body of the text. Similarly, automatic levels are now the dominant instruments for elevation determination, and accordingly their use is stressed. Dumpy levels, which nowadays are seldom used, are only briefly mentioned in the main text. However, for those who still use these instruments, they are covered in more detail in Appendix A.

In addition to the major changes noted above, other additions, revisions, and modifications have been made throughout the book. These include the following: A new section on surveying safety has been added, and the use of metric units has been expanded in discussion, in example problems, and in after-chapter homework problems. The latest versions of surveying equipment are presented, and include such devices as digital levels, reflectorless EDM instruments, laser alignment equipment, digital cameras and scanners. Discussion of metric stationing has been expanded within the topics of profile leveling, horizontal and vertical curves, and construction surveying. The material on state plane coordinates has been updated, and the chapter on control surveying has been substantially revised and expanded to present some introductory concepts of geodesy, and also provide greater depth of coverage on datums and reference coordinate systems. The coverage of condominium surveys has been expanded in the chapter on boundary surveys. In the chapter on photogrammetry, modern procedures and equipment have been presented, including the latest developments in softcopy photogrammetry and digital orthophoto production. Discussions on interfacing an aerial camera and GPS equipment in the aircraft to supplement ground control, and new airborne laser mapping systems are also presented. The chapter on GIS has been revised and updated. Website addresses that enable students to obtain additional information on many different topics are given throughout the book. Also, the bibliographies that follow each chapter have been updated.

A compact disc containing many useful computer programs accompanies the book. The CD has its own documentation in the form of help- and sample-data files. The disk contains programs for traverse computations for polygon, link, and radial traverses; area calculations; astronomical azimuth reduction; two-dimensional coordinate transformations; horizontal and vertical curve computations; and least-squares adjustments. It also contains trial versions of field-to-finish software.

As with past editions, this text continues to emphasize the theory of errors in surveying work. At the ends of most chapters common errors and mistakes related to the topics covered are listed so that students will be reminded to exercise caution in all of their work. Practical suggestions resulting from the authors' many years of experience are interjected throughout the text. More than 1000 after-chapter problems are presented to give instructors a wide choice in making assignments. A solution's manual is available to instructors who adopt the book.

ACKNOWLEDGMENTS

Past editions of this book, and this current one, have benefited from the suggestions, reviews, and other input from numerous students, educators, and practitioners For their help the authors are extremely grateful. In this edition, those professors and graduate students who reviewed material or otherwise assisted include: Earl Hurkholder ,New Mexico State University, Las Cruces, NM; Jonathan Chipman, University of Wisconsin, Madison; Bon Dewitt, University of Florida, Gainesville, FL; Francis Derby, Pennsylvania State University, Wilkes-Barre Campus, Lehman, PA; Paul Dukas, University of Florida, Gainesville, FL; Gary Jeffress, Texas A&M University-Corpus Christi, Corpus Christi, TX; Philip Hampson, Sherry Kopec, Matthew Lieb, John Muklewicz, and Lewis Strunk, Pennsylvania State University, Wilkes-Barre Campus, Lehman, PA; Thomas Lillesand, University of Wisconsin-Madison, Madison, WI; John Margitan, Nicolet Area Technical College, Rhinelander, WI; Gerald Mahun, Madison Area Technical College, Madison, WI; Ryan Morrison, University of Florida, Ganesville, FL; Brian Naberezny, University of Maine, Orono, ME; Ronald Robichaud, Nova Scotia Community College, Lawrencetown, NS, Canada; Robert Schultz, Oregon State University, Corvallis, OR; and Alan Vonderohe, University of Wisconsin-Madison, Madison, WI.

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To all of those named above, and to any others who may have been inadvertently omitted, the authors are extremely thankful. Finally, special recognition and thanks are expressed posthumously to Professor Russell C. Brinker, who coauthored this book from its third through its ninth editions. He passed away recently at the age of 95, after a distinguished career as a surveying educator and author.

Paul R. Wolf, Madison, WI
Charles D. Ghilani, Lehman, PA

Postscript: In order to improve future editions, the authors will gratefully accept any suggestions or constructive criticisms of this edition.

Users Review

From reader reviews:

Dawn Hicks:

What do you concentrate on book? It is just for students since they're still students or that for all people in the world, the particular best subject for that? Simply you can be answered for that issue above. Every person has diverse personality and hobby for each other. Don't to be forced someone or something that they don't want do that. You must know how great in addition to important the book Elementary Surveying. All type of

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Dorothy Stanek:

Why? Because this Elementary Surveying is an unordinary book that the inside of the book waiting for you to snap it but latter it will surprise you with the secret the item inside. Reading this book adjacent to it was fantastic author who all write the book in such amazing way makes the content interior easier to understand, entertaining technique but still convey the meaning completely. So , it is good for you for not hesitating having this nowadays or you going to regret it. This unique book will give you a lot of gains than the other book possess such as help improving your ability and your critical thinking approach. So , still want to hold up having that book? If I ended up you I will go to the publication store hurriedly.

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