Preface

This 13th Edition of *Elementary Surveying: An Introduction to Geomatics* is a readable text that presents basic concepts and practical material in each of the areas fundamental to modern surveying (geomatics) practice. It is written primarily for students beginning their study of surveying (geomatics) at the college level. Although the book is elementary, its depth and breadth also make it ideal for self-study and preparation for licensing examinations. This edition includes more than 400 figures and illustrations to help clarify discussions, and numerous example problems are worked to illustrate computational procedures.

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 observations. Additionally, mobile mapping has been introduced in this edition. Transits and theodolites, which are not 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 are seldom used nowadays, are only briefly mentioned in the main text. For those who still use these instruments, they are covered in more detail in Appendix A of this book. However, this will be the last edition that contains this appendix.

As with past editions, this book continues to emphasize the theory of errors in surveying work. At the end of each chapter, common errors and mistakes related to the topic 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. Many of the 1000 after-chapter problems have been rewritten so that instructors can create new assignments for their students. An Instructor's Manual is available on the companion website at www.pearsoninternationaleditions.com/ghilani for this book to instructors who adopt the book by contacting their Prentice Hall

sales representative. Also available on this website are short videos presenting the solution of selected problems in this book. These video solutions are indicated by the icon shown here in the margin.

In addition, updated versions of STATS, WOLFPACK, and MATRIX are available on the companion website for this book at www.pearsoninternationaleditions.com/ghilani. These programs contain options for statistical computations, 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. Mathcad® worksheets and Excel® spreadsheets are included on the companion website for this book. These programmed computational sheets demonstrate the solution to many of the example problems discussed herein. For those desiring additional knowledge in map projections, the Mercator, Albers Equal Area, Oblique Stereographic, and Oblique Mercator map projections have been included with these files. Also included are hypertext markup language (html) files of the Mathcad® worksheets for use by those who do not own the software.

Pearson offers many different products around the world to facilitate learning. In countries outside the United States, some products and services related to this textbook may not be available due to copyright and/or permissions restrictions. If you have questions, you can contact your local office by visiting www.pearsoninternationaleditions.com/ghilani or you can contact your local Pearson representative.

WHAT'S NEW IN THIS EDITION?

- Discussion on the impact of the new L2C and L5 signals in GPS
- Discussion on the effects of solar activity in GNSS surveys
- Additional method of computing slope intercepts
- Introduction to mobile mapping systems
- 90% of problems revised
- Video Examples

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