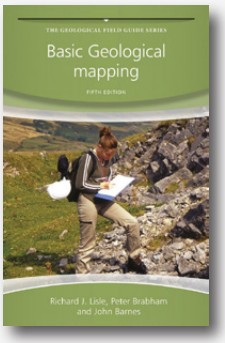
BASIC GEOLOGICAL MAPPING, 5TH EDITION



The Geological Field Guide Series

By Richard J. Lisle, Peter Brabham, and John W. Barnes.

John Wiley & Sons, 2011.240 pages, maps, diagrams, illustrations. $39.95, softcover.

ISBN: 978-0-470-68634-8

Review by: Raechel Bianchetti, Penn State University

In its fifth rendition, *Basic Geological Mapping* does not disappoint. Building upon the first four, this latest edition expands the authors' previous coverage on technology's place in geological mapping and provides more details on structural geologic mapping. It is a no-frills pocket guide that presents fundamental geological mapping techniques to novices in an easy-to-understand manner. For professionals, it's a quick reference guide, surveying a range of measurement and reporting methods used in the geologic discipline.

The authors—including Peter Brabham, who takes over as second author for the late John Barnes—begin with a brief introduction on the importance of geological mapping, and some of the commonsense safety precautions that should be considered when heading out to the field. Subsequent chapters cover every facet of geological field mapping, beginning with complete coverage of the proper equipment for surveying and ending with some guidelines for drafting geologic reports. In between, chapters include detailed accounts of field measurement methods, cartographic techniques including standard color and symbol usage for generating field copy maps, and even a chapter dedicated to reading topographic base maps.

The chapters are short, to the point, and crammed full of practical information. The authors make no excuses for this, stating early on that the book is meant to cover the "rudiments of geologic mapping." This book fits right in with the other five books in Wiley-Blackwell's *Geological Field Guide Series*, which cover topics such as mapping geologic structures and field description of metamorphic and sedimentary rocks. Its strongest points are its clear step-by-step directions for techniques, which are often complimented by helpful diagrams. For example, in the chapter entitled "Technological Aides to Mapping," examples of land surveying methods using optical surveying and total stations provide basic instructions for each of the methods as well as complete diagrams showing proper set up. The book is full of diagrams and photographs that support the text body, including three full color geological maps.

The longest chapter in the book, "Methods of Geological Mapping," is dedicated to covering a variety of measurement techniques used in the field. The chapter begins with coverage of the most basic methods, such as traversing, and concludes with the use of aerial photography for interpretation of geologic features. The authors' descriptions of the difficulties of interpretation of geologic features due to different environmental factors are thorough and supplemented with potential solutions. For example, vegetation cover can be an indirect indicator of the rock types underneath. This is an important consideration for both field mapping as well as the interpretation of aerial photography.

The book places a lot of emphasis on mapping in the United Kingdom and is written for a largely UK-based audience. The authors' word choices and all of the references throughout the book are specific to UK resources, such as the *British Standard BS5930:2999 Code of practice for site investigations* in reference to safety guidelines for digging. In most cases where a reference is made to such documents, there is no comment made about equivalent documents in other regions. While this does not diminish the quality of the guide itself, it can mean that readers need to be aware of the equivalent regulations and resources for their region of interest.

The one place that I feel this book falls short is its explanation of geological mapping from the point of view of actual map creation. The majority of the book is dedicated to the collection of geological information in the field, stressing the importance of thorough field notes and field maps, but only dedicates only two short chapters to the creation of the maps themselves. The first chapter, "Field Maps and Field Notes" is dedicated to transcription of field data, and

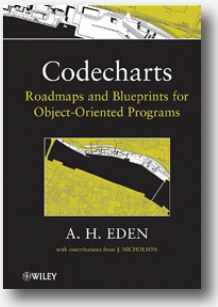
linking field notes to the maps generated *in situ*. Neatness, completeness, and factual display of the information collected are emphasized, while details such as the use of dashed versus solid lines for inferred or known contacts are scattered throughout. The second chapter, "Fair Copy Maps and Other Illustrations" is aimed at creating a clean map that shows selective information. Though not explicitly stated in the book, the authors mean data generalization, and describe which information from a field map transfers to the fair copy map. Some considerations that a geologist makes are familiar to any cartographer, including map function, clutter control, and scale.

The authors emphasize the use of hand-drawn maps in this book; while they do consider the use of GPS, GIS, stereographic aerial photography, and even Google Maps, the majority of instruction is aimed at the use of paper and pencil for the creation of both the field map and fair copy map. There is brief mention of the use of computer drafting and modeling in these two chapters. The chapter titled "Field Maps and Field Notes" covers the use of drafting software for the generation of fair copy maps, but warns that the use of GIS for generating geologic maps is very time consuming. Despite this, the authors list the basic steps in transferring their hand drawn field maps into a GIS. In the chapter titled "Fair Copy Maps and Other Illustrations" briefly introduces the use of geological modeling software such as RockWorks and Datamine for creating three-dimensional models from data collected in the field.

The book concludes with a chapter covering geologic report writing. The material covers report structure, referencing systems, and some general comments about the importance of clear and well-written reports for conveying geologic information. This chapter serves as a nice reminder for students of how to compose a report, and offers useful information on writing specific to geologic information.

Overall, I would recommend this book as a useful introductory textbook for geology students heading out for their first field mapping experience, or as a general reference handbook for the more advanced geologist. The book is succinctly written and contains many useful tricks and tips for a wide array of geological measurement techniques. I would recommend students using this book for geology courses outside the United Kingdom to explore the guidelines and map resources available to them in their home countries.

CODECHARTS: ROADMAPS AND BLUEPRINTS FOR OBJECT-ORIENTED PROGRAMS



By Amnon H. Eden, with contributions from Jonathon Nicholson.

John Wiley & Sons, 2011. 243 pages, no maps, 123 code charts, many diagrams. $93.95, hardcover.

ISBN: 978-0-470-62694-8

Review by: Jed Marti, Artis LLC

If you're interested in the design and structure of large-scale programs such as Geographic Information Systems from the perspective of designing your own, you might find this book of some interest. As the author points out, software systems are the most complex things our civilization has created, and their sordid past is filled with failure. Codecharts define the components and structure of object-oriented programs in simple graphical terms, somewhat like how antiquated flow charts mapped decisions, loops, and computations into something easier to understand than Fortran code. The aim is to create a visualization that will "fit on the side of a van." It is hoped that programs developed from Codechart descriptions will have better structure that those that are not. By providing a mapping between LePUS3, the language of Codecharts, and Java (other languages are possible), it is possible to verify that a Codechart models a Java program.

There are 18 chapters divided into 3 sections. The first section compares Design Description languages and Codecharts (and its language LePUS3) to the more widely known Universal Modeling Language (UML), of which the author is very critical. The second, and largest, section describes modeling the various components of Object Oriented programs and presents examples of common practice and structures. The final theory section proves the completeness of Codecharts and provides an entrance for formal verification of programs so described.