



BOOK REVIEW

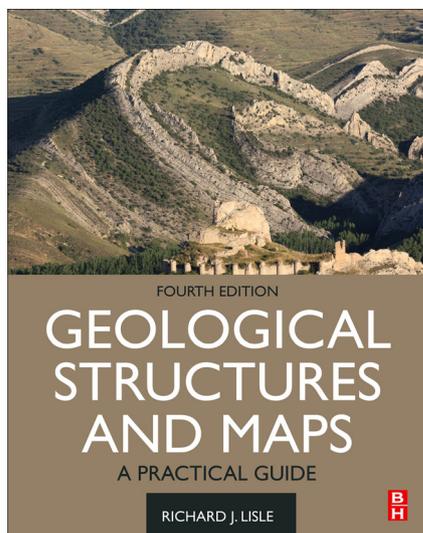
Geological structures and maps – A practical guide (4th edn)

RICHARD J LISLE

Butterworth Heinemann: An Imprint of Elsevier 2021, ISBN 978-0-12-818025-9

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The recently published book ‘Geological structures and maps – A practical guide’ (4th edn, Elsevier) by Richard J Lisle in 2021 is the revised version of earlier ones with an example of naturally deformed structures. It is a concise book on structures, their interpretation on geological maps and problems, and is one of the best books, for undergraduate geology and civil engineering students, to understand the fundamentals of structural geology.

As per the title, the author has organised the book under the following seven chapters: (1) Geological

maps; (2) Uniformly dipping beds; (3) Folding; (4) Faulting; (5) Unconformity; (6) Igneous rocks; and (7) Folding with cleavage.

Chapter 1 deals with the geological maps, how such maps are prepared and their usage with many illustrative examples.

Chapter 2 describes the structures consisting of planar beds which are horizontal or with a uniform slope due to tilting of original horizontal sedimentary rocks. In this chapter, the author has tried to explain the method of measurement of apparent and true dip, strike line and their relationship, and discussed the outcrop pattern of uniformly dipping beds representing the surface of map and properties of contour maps. The author has vividly explained the drawing of vertical cross-sections through topographical and geological surfaces with worked examples.

Chapter 3 deals with folding after describing the basic geometrical features and terms related to the orientation of fold. Author has discussed the classification of folds based on the curvature variation, tightness, symmetry, cylindricality of folds and layer thickness variation around the fold. The worked examples related to the determination of plunge of a fold from the dip of a fold limb horizontal section through folds, construction of true fold profile and recognition of folds on map, etc., are praiseworthy which differentiate this book from the other books.

Chapter 4 is devoted to faulting and its classification based on the slippage. After a brief description of the various parts of the fault, the author has discussed how to calculate slip, separation, repetition and omission of strata, and determination of slip in the worked example.

Chapter 5 describes different types of unconformity, overslip and overlap and discussed their geological significance. The end of the chapter also includes problems for the students.

Chapter 6 deals with intrusive and extrusive igneous rocks with their examples in detail along with problems for students.

Chapter 7 is devoted to cleavage and its relationship with folding in a metamorphic terrain along with worked examples.

The book provides complete information on the structural features and geological maps and techniques in a simple language. Coloured field photographs, geological maps and line diagrams are of very high quality and help in visualizing the three-dimensional features. Worked examples help in solving the exercises provided. Problems at the end of each chapter help in self-study.

The book is very much useful for undergraduate Geology and Civil Engineering students for understanding the fundamentals of structural geology. I recommend this book as a valuable resource for the libraries of universities and institutions having earth science as branch of study or for personal collection of students and researchers in the field of structural geology.

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