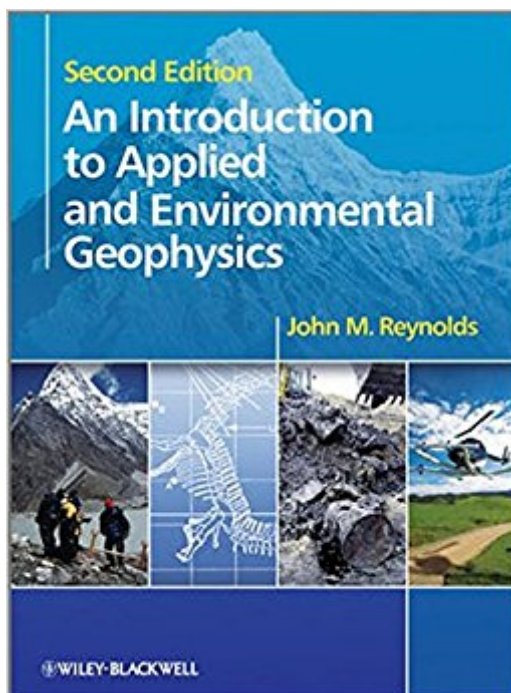


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# An Introduction To Applied And Environmental Geophysics



## Synopsis

An Introduction to Applied and Environmental Geophysics, 2nd Edition, describes the rapidly developing field of near-surface geophysics. The book covers a range of applications including mineral, hydrocarbon and groundwater exploration, and emphasises the use of geophysics in civil engineering and in environmental investigations. Following on from the international popularity of the first edition, this new, revised, and much expanded edition contains additional case histories, and descriptions of geophysical techniques not previously included in such textbooks. The level of mathematics and physics is deliberately kept to a minimum but is described qualitatively within the text. Relevant mathematical expressions are separated into boxes to supplement the text. The book is profusely illustrated with many figures, photographs and line drawings, many never previously published. Key source literature is provided in an extensive reference section; a list of web addresses for key organisations is also given in an appendix as a valuable additional resource.

Covers new techniques such as Magnetic Resonance Sounding, Controlled- Source EM, shear-wave seismic refraction, and airborne gravity and EM techniques. Now includes radioactivity surveying and more discussions of down-hole geophysical methods; hydrographic and Sub-Bottom Profiling surveying; and Unexploded Ordnance detection. Expanded to include more forensic, archaeological, glaciological, agricultural and bio-geophysical applications. Includes more information on physio-chemical properties of geological, engineering and environmental materials. Takes a fully global approach. Companion website with additional resources available at [www.wiley.com/go/reynolds/introduction2e](http://www.wiley.com/go/reynolds/introduction2e). Accessible core textbook for undergraduates as well as an ideal reference for industry professionals. The second edition is ideal for students wanting a broad introduction to the subject and is also designed for practising civil and geotechnical engineers, geologists, archaeologists and environmental scientists who need an overview of modern geophysical methods relevant to their discipline. While the first edition was the first textbook to provide such a comprehensive coverage of environmental geophysics, the second edition is even more far ranging in terms of techniques, applications and case histories.

## Book Information

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## Customer Reviews

"A course using it will provide as much geophysics as many want or need, he says, but can also establish a foundation for more advanced courses. It discusses some topics rarely covered in introductory texts, such as geophysical survey design and line optimization techniques, image processing of potential field data, recent developments in high-resolution seismic reflection profiling, and electrical resistivity sub-surface imaging." (Book News, 1 August 2011) --This text refers to an out of print or unavailable edition of this title.

This book represents the first introductory text to describe the developing field of environmental geophysics. A significant portion of the material is new, as well as case histories which have never been published before. The geographical basis of the case histories is worldwide, with examples originating from Australia to North America, from Arctic Canada to the Antarctic, from Europe to China. The level of mathematics and physics is kept to a minimum but is described qualitatively within the text. Particular attention is paid to geophysical survey design and line optimization techniques. The book also covers the rapidly developing geophysical field techniques and consequent computer-based data processing problems. --This text refers to an out of print or unavailable edition of this title.

The second edition of this book is one of the best overall books on geophysics I've found. I've used this as a reference in many of my geophysics classes and it has proved a valuable resource. For the majority of readers looking for a good introductory book on geophysics, this is the best option. It introduces the basic methods, explains the theory behind them and then explores applications. It doesn't go into vast depth on each of the methods, due to space constraints, so if you are only interested in a singular method such as seismic, this book is not ideal. However, it provides enough information to introduce the methods and bring you to the point that you could read a more advanced book on the method and understand the terminology. While this book is titled an

Introduction to Applied and Environmental Geophysics, it does also cover topic related to oil and gas exploration and mining. It was even used as a text in my graduate level mining geophysics class. In terms of the first versus the second edition, both books cover the same material and have very similar text. The first edition can be had for very little which is nice, however, as a reference the second edition is much improved due to the presence of lots of nice color diagrams and images. I've used both editions and found these images in the second edition make the book much more readable and as they say, a good picture is worth a thousand words. So if you can afford the newer edition, purchase it, you will not regret it. If I could only choose one book to have on geophysics, this would be the text I'd choose. Highly recommended for both Geoscience students and enthusiasts, no matter the specific discipline or applications desired.

So far (5 weeks into my Gravity and Magnetic Exploration Techniques course), seems like it's missing some fundamentals, such as the formulas you would use to plot the profile of a gravity anomaly over various geometric shapes (e.g. buried sphere, cylinder...), so I had to refer to other texts even though this one is so large and seemingly comprehensive. Still seems like a good reference book.

Well written textbook. I did high school physics over 25 years ago so I have just a very basic physics background. I thought the book was comprehensive and generally covered the topic in an easy to understand and follow format. Clear diagrams and figures that were related to the material.

This book is the best overview of near surface geophysics that is currently available. It is very light on theory, but is excellent for a first course in near surface geophysics or for a non-geophysicist who would like to expand their knowledge. I have read the book cover to cover over the last year as well as rereading some relevant chapters. There are some errors in the few derivations that are actually in the book. I have purchased six copies for co-workers who do not have geophysics degrees but work in the field. If you would like a deeper, more theoretical background get a copy of Applied Geophysics by Telford. With those two books you will be well grounded in near surface geophysics.

Book was as described and in perfect condition

I have been using this book for my geophysics class now for over a month. It is very well written and easy to understand. Reynolds takes a difficult subject and breaks it down into easy to digest

sections. It is in black and white, but color is not needed.

I was kind of disappointed with what I got. The print edition that I got was a very longitudinal narrow book. This shape to me was inconvenience. Another issue was the ending of sentences on the left pages were very close to the center of the book and the same with the starting of the sentences on the right page. I could have returned it and asked for the other regular version that my friend bought just a short while before me, but the semester already has begun and homeworks started to rain on me, so I didn't. The book is also written in the UK English the units system was totally different from the US one. I also noticed that the author had also altered the UK units system, like using Megagrams equivalent to Kilograms.

The book often does a poor job of explaining geophysical methods in a way that benefits the introductory student. At times it is very vague, especially when it comes to explaining the mathematics behind a certain method. I'm sure there are better books to use for an introductory geophysics course.

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