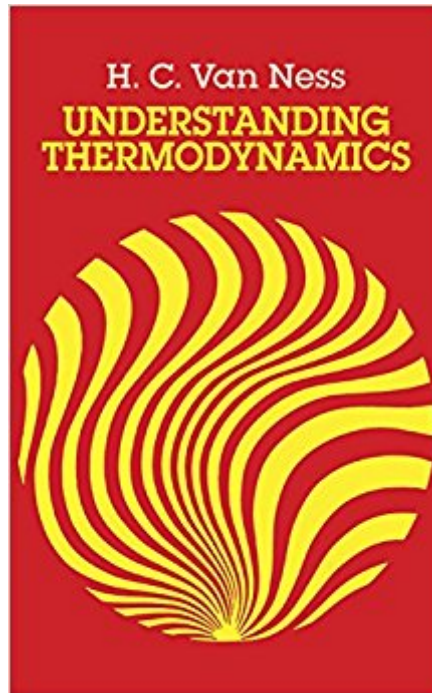




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# Understanding Thermodynamics (Dover Books On Physics)



## Synopsis

Grappling with the first and second laws of thermodynamics can test the intellectual mettle of even the most dedicated student of the physical sciences. Approaching the subject for the first time may raise more queries and doubts than are usually handled in the basic, straightforward textbook. Based on a series of lectures delivered to 500 sophomore engineering students at Rensselaer Polytechnic Institute, Dr. Van Neer's clear, lucid treatment is readily comprehensible by undergraduate-level science and engineering students. His language is informal, his examples are vivid and lively, his perspective is fresh. This book, a companion to a basic textbook, discusses thermodynamics, a topic of profound importance in the study of physics, in a manner which elucidates fundamental concepts and demonstrates their practical applicability. In these increasingly energy-conscious and costly times, as traditional energy sources are being depleted and revolutionary new sources are contemplated, appreciating the consequences of the laws of thermodynamics is more than a fascinating avenue of intellectual inquiry: it is a pragmatic concern imperative to all — students, scientists, engineers, technicians, politicians, businessmen, and anyone facing the energy challenges of the future. Here is help understanding concepts which will prove all-important in the next century. Dr. H. C. Van Ness is a distinguished professor of chemical engineering at Rensselaer Polytechnic Institute and co-author of several textbooks on thermodynamics. He is unsurpassed as an expert in the field.

## Book Information

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## Customer Reviews

Really well written expose on the intricacies of thermodynamics which are actually seated in the observation of nature! It fortifies the idea that conservation equations (energy conservation, mass conservation, ....., jelly bean and sugar cube conservation) cannot be derived but are observations of nature in the language of Mathematics. Boy, am I going to be articulate about this material when I teach thermodynamics for the second time over next year and part of that expected eloquence is because of the book and the nature in which material is laid out in it. My favorite section, so far, in this book would be that on "reversibilities" and how the quasistatic thermodynamic process has been explicated WITHOUT differential calculus symbols. A truly gentle and highly effective introduction to thermodynamics to undergraduate students, researchers and practicing engineers alike. I now have purchased both the e-book and the paper copy.

Terrific high level overview. As a trained chemical engineering albeit almost 2 decades ago, I found many of the concepts still graspable, with the exception of the final chapter. Definitely worth a read if you are just getting into Thermodynamics or Chem E. I would highly recommend this book (or dealer for that matter).

Everyone in physics, engineering, or chemistry should read this little book! It is a classic! No background is required, and it is full of gems regarding thermal systems. The discussions of the first law, as well as entropy and the second law, are especially insightful. My students (from physics, mathematics, and engineering) loved the book as a supplement to a common text in thermal physics.

I really enjoyed this little book on thermodynamics. It was very well written and gave a clear, concise overview of thermodynamics. It provides examples, figures, and thought exercises. This is definitely something good for the person who wants to get a brief study of the topic without getting too engrossed in it.

This book was a great help to me in understanding some of the basics of Thermo. I suggest anyone read it that will be taking a course in thermo in the near future. It will make your first few lectures much easier and simple. If you already have a basis in thermo then this may be a little too light for you but it is interesting either way so if you are extra curious or love thermo then go ahead and purchase.

Highly recommended for those who would like to look into the thermodynamics from a different angle than the classical textbooks. Very concise and well written. This book is NOT a replacement for the textbook as also mentioned by the author, so I'd recommend reading this book after going through a textbook first.

I always felt thermodynamics to be a very difficult and deep subject both in my undergrad and grad school....never got hold of it completely...I guess no one can grasp everything in thermo....I credit my inability to a bad introduction to thermodynamic concepts....This book on the other hand, although small in size, packs a big punch....It takes a very different approach to explaining initial concepts like the laws of thermo and provides one of the best explanations of the concepts. I wish someone recommended this book initially in my undergrad days....thermo would have been a lot clearer and my grades a little higher! :P

Delightful little volume. Mathematically modeling thermo-mechanics is not as straightforward as electrical science. Formulas of thermodynamics are crude, and does not follow reality closely. Mathematical results are way off compared to EE. This little gem of a volume makes an excellent job of warming your hearth to Thermo science.

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