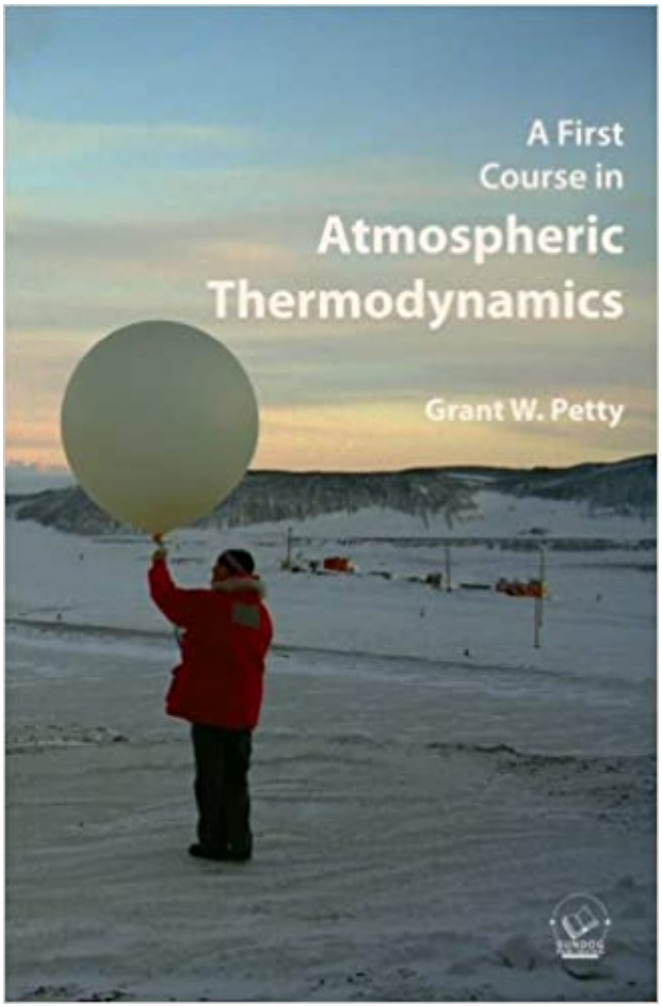
A First Course In Atmospheric Thermodynamics



Synopsis

This textbook is written for meteorology majors who require an initial introduction to the physical properties of the atmosphere and to the essential principles and real-world applications of atmospheric thermodynamics. These topics are supplemented by a sampling of techniques and technologies related to atmospheric measurements and observations. A unique tutorial, included as an appendix, teaches students how to attack physical problems symbolically, deferring numerical calculations until the final step in the solution. The author's objectives include not only covering the traditional core subject matter of an undergraduate thermodynamics course but also facilitating students transition from a purely abstract understanding of calculus and physics concepts to the confident application of both to the science of meteorology.

Book Information

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Customer Reviews

Grant W. Petty is a professor in the Atmospheric and Oceanic Sciences Department at the University of Wisconsin-Madison, where he teaches atmospheric physics, atmospheric radiation and remote sensing to undergraduate and graduate students. A former shipboard and aviation weather observer in the U.S. Navy and a private pilot, he brings a uniquely practical perspective to the subject of this book. He is also the author of A First Course in Atmospheric Radiation.

I should make it clear that I am not a student of meteorology, and did not purchase this book in connexion with a college course. My motive to purchase was simply an interest in learning something about the forces driving the movement of air and water in the atmosphere. So my comments are aimed at those like myself with a non-course related interest.Thanks to the simplicity

(in component terms) of the system under study, atmospheric thermodynamics turns out to be a relatively uncomplicated subject, at least at the level presented in this book. Assuming one has had prior encounters with the basics of physical science and one’s math is not too rusty, it’s fairly straightforward to read.The eight chapters in the book interweave the respective ’atmospheric’ and ’thermodynamics’ subjects in a sensible sequence that builds up into a complete picture of this very practical science.Overall, I found the subject quite engrossing and learned a good deal from this reasonably-priced book. The only downside was the number of symbols used in the text, many of which will be unfamiliar to non-meteorologists. I found myself constantly having to refer to the appendix where the ’common’ symbols are listed - all 102 of them!

It looks very well on the introductory shelf on environment sciences. I am still going on it.

I purchased this book as a mandatory text book for a thermodynamics course I was taking at university. It arrived quickly so I was pleased to have it for the start of class! It is a wonderful text, very well formatted and easy to read, everything is well explained and it is a good insight into thermodynamics for meteorology and possibly other applications. I believe I have read almost the whole book and utilised most of it to great effect, as it contains very detailed diagrams and good example applications and problems. Very glad I purchased my own copy, I can see it becoming invaluable in the years to come!

This book is a great resource for understanding meteorological thermodynamics, but it sometimes skips steps while giving mathematical proofs, which can make it much more difficult for the reader to understand why it’s true.

I bought this book for a meteorology class and I have continued to use it since. Amazingly written.

This book is easy to understand and gives good explanations for the topic of thermo.If this isn’t your school’s book, and your having trouble understanding the subject,I would definitely recommend this book.

Without this book there’s no way I could have ever succeeded in my college course, since my bookstore didn’t have it! It’s a great book for regular and atmospheric thermodynamics

New book!

A First Course in Atmospheric Thermodynamics Mid-Latitude Atmospheric Dynamics: A First Course Thermodynamics, Statistical Thermodynamics, & Kinetics (3rd Edition) Thermodynamics, Kinetic Theory, and Statistical Thermodynamics (3rd Edition) Holt Literature & Language Arts Warriner's Handbook California: Student Edition Grade 7 First Course CA First Course 2010 Holt Traditions Warriner's Handbook: Language and Sentence Skills Practice First Course Grade 7 First Course Trevor Waugh's Winning with Watercolour: Tips and Techniques for Atmospheric Paintings Jean Haines' Atmospheric Watercolours: Painting with Freedom, Expression and Style Dynamics of Atmospheric Flight (Dover Books on Aeronautical Engineering) Gaskinetic Theory (Cambridge Atmospheric and Space Science Series) Atmospheric and Space Flight Dynamics: Modeling and Simulation with MATLABÂ® and SimulinkÂ® (Modeling and Simulation in Science, Engineering and Technology) Handbook of Optics, Third Edition Volume V: Atmospheric Optics, Modulators, Fiber Optics, X-Ray and Neutron Optics Atmospheric Monitoring with Arduino: Building Simple Devices to Collect Data About the Environment Handbook of Weather, Climate and Water: Atmospheric Chemistry, Hydrology and Societal Impacts Atmospheric Science, Second Edition: An Introductory Survey (International Geophysics) Climatology: An Atmospheric Science (3rd Edition) Atmospheric Chemistry and Physics: From Air Pollution to Climate Change Introduction to Geomagnetically Trapped Radiation (Cambridge Atmospheric and Space Science Series) Principles Of Atmospheric Science Atmospheric Chemistry: RSC