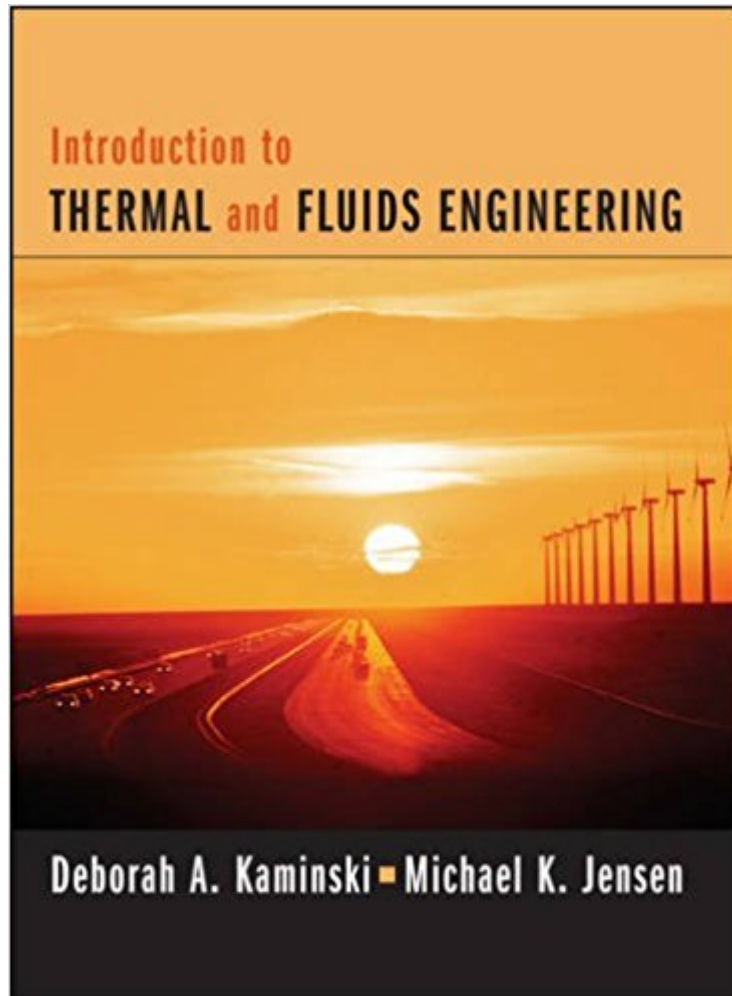




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# Introduction To Thermal And Fluids Engineering



## Synopsis

Using unifying themes so that the boundaries between thermodynamics, heat transfer and fluid mechanics becomes transparent, this book presents an in-depth examination of the three disciplines providing the reader with the background to solve problems.

## Book Information

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## Customer Reviews

The thermal sciences in an integrated approach! In the real world, thermal systems problems don't always conform to the rigid disciplinary lines of thermodynamics, fluid mechanics, and heat transfer. More often, you'll need to draw from all three of these disciplines to find a solution. That's why Deborah Kaminski and Michael Jensen present a highly innovative and integrated approach that highlights the interconnections among thermodynamics, fluid mechanics, and heat transfer. The text introduces these three topics early, allowing students to build a firm foundation for later chapters. Throughout the text, integrated examples and problems illustrate the interconnected nature of the three disciplines. Kaminski and Jensen's approach features: Early introduction of heat transfer and fluids, to allow application of these concepts early in the course. Common notation used throughout the text, to emphasize the links among thermodynamics, fluids, and heat transfer. Example problems that integrate the three disciplines. These problems demonstrate how to incorporate information from several different disciplines in solving problems. Approach sections in the example problem solutions, which identify where you are going before beginning a problem. Additionally, assumptions are stated as needed,

allowing you to see the problem-solving process in action. Clear descriptions of physical and fundamental processes that relate to what you may observe in your everyday life. Over 150 worked examples and 850 homework problems. --This text refers to an out of print or unavailable edition of this title.

I studied chemical engineering as an undergraduate over 15 years ago. I am working on a masters degree in thermal fluids engineering. This text was used for a review/ramp course that covered some thermodynamics, some fluid mechanics and some heat transfer. The concept of teaching these subjects in an integrated course with an integrated textbook is new (to me at least). If you don't like this integrated pedagogy, you will likely find many faults with the book. When solving real world engineering problems, I find the most useful skill is to combine knowledge from multiple disciplines and integrate them. A lot of my undergraduate curriculum went into heavy derivations and details that have not been very useful in my career as an engineer. However, learning the key concepts from each subject, and then combining to solve interdisciplinary problems is very valuable to me. The trade-offs for this text and for this integrated approach is the sacrifice of detail and rigor. The sections on thermodynamics were spot-on for the key concepts that mechanical engineers would need, but would be totally inadequate for chemical engineers (no mention of fugacity or activity, no development of equations of state, no coverage of chemical potential, etc.) The sections on fluid mechanics were practical and handy for actually solving flow in conduits and external flow problems; they also provided good physical descriptions of the phenomena, but they were clearly lacking in rigor in development and derivation. Also, no coverage of dimensional analysis and similarity, turbomachinery nor compressible flow were included. That would be appalling to a fluids expert, but still enough of the general concepts were conveyed to facilitate learning those other areas from other sources. The heat transfer sections were very good at conveying a lot of subjects with minimal pages. In the few chapters on HT, I can find almost all of the steady state conduction, transient conduction, convection, correlations for Nusselt numbers, and radiation that are covered in a 900 page text dedicated to HT alone. All in all this is a very efficient text. I found this textbook to be very good at it's intended purpose. However, for more complete coverage of any of the three topics dedicated textbooks would be needed. Depending on your needs and your curriculum this book could be ideal or just frustrating. By the way, I found it very handy to have all the appendices that contain the thermophysical properties for solids, liquids and gases in one book. I use the tables quite frequently for other classes and work related calculations.

This is an excellent text. I used it during the course of the same name at Rensselaer Polytechnic where the authors teach. It presents a unified conceptual approach to thermodynamics, fluid mechanics and heat transfer. Its presentation and organization is very clear and well illustrated. I lent it to a friend of mine after I completed the course and decided it was an essential to my library as a practicing engineer and purchased my second copy of it.

Back cover has two cracks. The content is ok. I am a steering system engineer, I need to keep everything good and safe.

met all my wishes Conditions was as listed on the display, no problems found would order again if I find the need.

Book is very useful, but does not provide enough background information to survive thermal exams.

Thanks for the book!

Great content, very helpful!!

Not too bad of a textbook. It's the only thermo class that I need so it's pretty basic. I recommend having a basic fluid mechanics class to understand a few of the concepts in this book, but it's not critical.

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