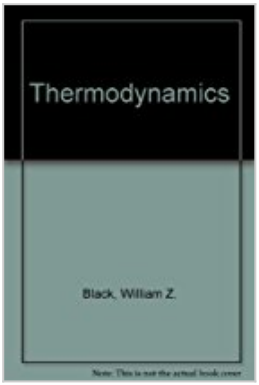

Thermodynamics

By William Z. Black, James G. Hartley

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The third edition of "Thermodynamics "provides an easily understandable presentation of classical thermodynamics that builds on the student's background of energy concepts first learned in physics and chemistry. The material is organized in a logical progression from the conservation of mass, the conservation of energy, and the second law. The engineering perspective is retained and a variety of familiar examples are used so that the student can appreciate how thermodynamics affects a broad range of subjects. The authors continue to emphasize a systematic approach to problem solving and that approach is used in all example problems in the text. This problem solving method provides not only a reasonable way to approach the task of solving thermodynamics problems, but it also will serve the student in other engineering and science disciplines.Each example is worked in detail, and particular attention has been given to the proper use of units and unit conversions in the solutions.Detailed explanations accompany the simplifications when the general equations are reduced to the forms that apply to special cases so that the student will gain a better understanding of the conservation principles as well as greater awareness of these powerful analytical tools. Examples address the questions of which form of the conservation laws should be used and why certain assumptions can be applied to simplify the solutions.Believing that second-law analysis should play a major role in the analysis of engineering problems, the authors provide extensive coverage of the second law of thermodynamics. The development of the second law is similar to that used for the introduction of the conservation of mass and energy. The results of the second law are carried over into subsequent chapters where they are applied to thermodynamic systems such as power and refrigeration cycles as well as air-conditioning processes.

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Editorial Review

From the Back Cover

Integrating computers, software, tutorials, and design problems in a logical and straightforward manner, this significantly revised introductory-level text provides students with a well-rounded understanding of complex concepts and enables them to solve difficult thermodynamics problems more easily. Updated to address the field's latest trends, this edition features an entirely new chapter on compressible flow, along with coverage of a new refrigerant--R-134-a--and numerous sections on environmental factors as they relate to energy systems. The text is supported by more than 100 end-of-chapter questions and includes expanded property software featuring many new properties and substances. Two versions of the text--SI and an English/SI version--are available, as is a fully licensed computer program that enables students to assess and solve thermodynamic problems with greater confidence.

Learning Aids

I Version Contains Problems and Examples Exclusively in SI Units * Problem Solving Scheme for use with all Thermodynamics *Problems * End-of-Chapter Problems

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For the Instructor: *Solutions Manual*, available only through your sales specialist.

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Users Review

From reader reviews:

Ryan Wysocki:

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