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By E Rathakrishnan

Fundamentals Of Engineering Thermodynamics By E Rathakrishnan

*Now in a Sixth Edition,
Fundamentals of Engineering
Thermodynamics maintains its
engaging, readable style while
presenting a broader range of
applications that motivate
student understanding of core
thermodynamics concepts. This
leading text uses many relevant
engineering-based situations to
help students model and solve
problems.*

This book differs from other

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thermodynamics texts in its objective which is to provide engineers with the concepts, tools, and experience needed to solve practical real-world energy problems. The presentation integrates computer tools (e.g., EES) with thermodynamic concepts to allow engineering students and practising engineers to solve problems they would otherwise not be able to solve. The use of examples, solved and explained in detail, and supported with property diagrams that are drawn to scale, is ubiquitous in this textbook. The examples are not trivial, drill problems, but rather

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complex and timely real world problems that are of interest by themselves. As with the presentation, the solutions to these examples are complete and do not skip steps. Similarly the book includes numerous end of chapter problems, both typeset and online. Most of these problems are more detailed than those found in other thermodynamics textbooks. The supplements include complete solutions to all exercises, software downloads, and additional content on selected topics. These are available at the book web site www.cambridge.org/KleinandNellis.

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Master the fundamentals of thermodynamics and learn how to apply these skills in engineering practice today with Reisel's PRINCIPLES OF ENGINEERING THERMODYNAMICS, SI, 2nd Edition. This edition's informal writing style helps make abstract concepts easier to understand. In addition to mastering fundamental principles and applications, you explore the impact of different system parameters on the performance of devices and processes. For example, you study how changing outlet pressure in a turbine changes the power

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produced or how the power requirement of a compressor varies with inlet temperature. This unique approach strengthens your understanding of how different components of thermodynamics interrelate, while demonstrating how you will use thermodynamics in your engineering career. You also learn to develop computer-based models of devices, processes and cycles as well as practice using internet-based programs and computer apps to find thermodynamic data, exactly like today's practicing engineers. Important Notice: Media content referenced within the product

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ebook version.*

*This book deals with all the
concepts in first level
Thermodynamics course.*

*Numerous examples are given
with the objective of illustrating
how the concepts are used for
the thermodynamic analysis of
devices. Please note: T&F does
not sell or distribute the
Hardback in India, Pakistan,
Nepal, Bhutan, Bangladesh and
Sri Lanka*

*Provides an essential treatment
of the subject and rigorous
methods to solve all kinds of
energy engineering problems.*

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Market_Desc: · Mechanical Engineers Special Features: · Introduces and then uses in examples a formal technique for organizing the analysis and solution of problems. · Emphasizes environmental issues and concerns. · Contains modernized and expanded coverage of the second law of thermodynamics About The Book: This edition of the book continues to present a comprehensive and rigorous treatment of classical thermodynamics, while retaining an engineering perspective. The text lays the groundwork for subsequent studies in fields such

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*as fluid mechanics, heat transfer
and statistical thermodynamics,
and prepares students to
effectively apply thermodynamics
in the practice of engineering.*

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Thermodynamics:

Fundamentals and

Applications is a 2005

**text for a first graduate
course in Chemical**

**Engineering. The focus is
on macroscopic**

thermodynamics;

discussions of modeling

and molecular situations

are integrated throughout.

Underpinning this text is

the knowledge that while

thermodynamics describes

natural phenomena, those

descriptions are the

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products of creative, systematic minds. Nature unfolds without reference to human concepts of energy, entropy, or fugacity. Natural complexity can be organized and studied by thermodynamics methodology. The power of thermodynamics can be used to advantage if the fundamentals are understood. This text's emphasis is on fundamentals rather than modeling. Knowledge of the basics will enhance the ability to combine them with models when applying

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thermodynamics to practical situations. While the goal of an engineering education is to teach effective problem solving, this text never forgets the delight of discovery, the satisfaction of grasping intricate concepts, and the stimulation of the scholarly atmosphere. A comprehensive, best-selling introduction to the basics of engineering thermodynamics. Requiring only college-level physics and calculus, this popular book includes numerous illustrations and graphs

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to help students learn engineering concepts. A tested and proven problem-solving methodology encourages readers to think systematically and develop an orderly approach to problem solving: Provides readers with a state-of-the art introduction to second law analysis. Design/open-ended problems provide readers with brief design experiences that offer them opportunities to apply constraints and consider alternatives. Never HIGHLIGHT a Book Again! Virtually all of

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and events from the
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.
A basic, practical
introduction to
engineering thermodynamics
for students at Higher
National Level. The book

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focuses on practical applications of theory to build students' understanding and interest. Worked examples and self-assessment questions reinforce understanding.

Written with the first year engineering students of undergraduate level in mind, the well-designed textbook, now in its Third Edition, explains the fundamentals of mechanical engineering in the area of thermodynamics, mechanics, theory of machines, strength of materials and fluid dynamics. As these

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subjects form a basic part of an engineer's education, this text is admirably suited to meet the needs of the common course in mechanical engineering prescribed in the curricula of almost all branches of engineering. This revised edition includes a new chapter on 'Fluid Dynamics' to meet the course requirement. Key Features • Presents an introduction to basic mechanical engineering topics required by all engineering students in their studies. • Includes

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a series of objective type question (True and False, Fill in the Blanks and Multiple Choice Questions) with explanatory answers to help students in preparing for competitive examinations. • Provides a large number of solved problems culled from the latest university and competitive examination papers which help in understanding theory. Master the fundamentals of thermodynamics and learn how to apply these skills in engineering practice today with Reisel's
PRINCIPLES OF ENGINEERING

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THERMODYNAMICS, 2nd Edition. This edition's informal writing style helps make abstract concepts easier to understand. In addition to mastering fundamental principles and applications, you explore the impact of different system parameters on the performance of devices and processes. For example, you study how changing outlet pressure in a turbine changes the power produced or how the power requirement of a compressor varies with inlet temperature. This

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unique approach
strengthens your
understanding of how
different components of
thermodynamics
interrelate, while
demonstrating how you will
use thermodynamics in your
engineering career. You
also learn to develop
computer-based models of
devices, processes and
cycles as well as practice
using internet-based
programs and computer apps
to find thermodynamic
data, exactly like today's
practicing engineers.
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Applications

Fundamentals of

Engineering

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User's Guide

FUNDAMENTALS OF MECHANICAL
ENGINEERING

This leading text in the field maintains its engaging, readable style while presenting a broader range of applications that motivate engineers to learn the core thermodynamics concepts. Two new coauthors help update the material and integrate engaging, new problems. Throughout the chapters, they focus on the relevance of thermodynamics to modern

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engineering problems. Many relevant engineering based situations are also presented to help engineers model and solve these problems.

The Clear, Well-Organized Introduction to Thermodynamics Theory and Calculations for All Chemical Engineering Undergraduate Students This text is designed to make thermodynamics far easier for undergraduate chemical engineering students to learn, and to help them perform thermodynamic calculations with confidence. Drawing on his award-winning courses at Penn State, Dr. Themis Matsoukas focuses on “why” as well as “how.” He offers

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extensive imagery to help students conceptualize the equations, illuminating thermodynamics with more than 100 figures, as well as 190 examples from within and beyond chemical engineering. Part I clearly introduces the laws of thermodynamics with applications to pure fluids. Part II extends thermodynamics to mixtures, emphasizing phase and chemical equilibrium. Throughout, Matsoukas focuses on topics that link tightly to other key areas of undergraduate chemical engineering, including separations, reactions, and capstone design. More than 300 end-of-chapter problems range

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from basic calculations to realistic environmental applications; these can be solved with any leading mathematical software. Coverage includes

- *Pure fluids, PVT behavior, and basic calculations of enthalpy and entropy*
- *Fundamental relationships and the calculation of properties from equations of state*
- *Thermodynamic analysis of chemical processes*
- *Phase diagrams of binary and simple ternary systems*
- *Thermodynamics of mixtures using equations of state*
- *Ideal and nonideal solutions*
- *Partial miscibility, solubility of gases and solids, osmotic processes*
- *Reaction equilibrium with*

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*applications to single and
multiphase reactions*

*Completely updated, the seventh
edition provides engineers with an
in-depth look at the key concepts
in the field. It incorporates new
discussions on emerging areas of
heat transfer, discussing
technologies that are related to
nanotechnology, biomedical
engineering and alternative
energy. The example problems are
also updated to better show how
to apply the material. And as
engineers follow the rigorous and
systematic problem-solving
methodology, they'll gain an
appreciation for the richness and
beauty of the discipline.*

Fundamentals of Engineering

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Thermodynamics, 8th Edition Binder Ready Version by Moran, Shapiro, Boettner and Bailey continues its tradition of setting the standard for teaching students how to be effective problem solvers. This market-leading text emphasizes the authors collective teaching expertise as well as the signature methodologies that have taught entire generations of engineers worldwide. Integrated throughout the text are real-world applications that emphasize the relevance of thermodynamics principles to some of the most critical problems and issues of today, including a wealth of coverage of topics related to energy and the environment,

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biomedical/bioengineering, and emerging technologies. This text is an unbound, three hole punched version.

ALERT: The Legacy WileyPLUS platform retires on July 31, 2021 which means the materials for this course will be invalid and unusable. If you were directed to purchase this product for a course that runs after July 31, 2021, please contact your instructor immediately for clarification. For customer technical support, please visit <http://www.wileyplus.com/support>. Fundamentals of Engineering Thermodynamics sets the standard for teaching students how to be effective problem

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solvers. Real-world applications emphasize the relevance of thermodynamics principles to some of the most critical problems and issues of today, including topics related to energy and the environment,

biomedical/bioengineering, and emerging technologies.

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taught entire generations of engineers worldwide. Integrated throughout the text are real-world applications that emphasize the relevance of thermodynamics principles to some of the most critical problems and issues of today, including a wealth of coverage of topics related to energy and the environment, biomedical/bioengineering, and emerging technologies.

[With Applications to Chemical Processes](#)

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Presents a comprehensive and rigorous treatment of the subject from the classical perspective to offer a problem-solving methodology that encourages systematic thinking. Noted for its treatment of the second law, this text clearly presents both theory and application. The presentation of chemical availability has been

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extended by a cutting-edge discussion of standard chemical availability. Design applications and problems have been updated to include economic considerations.

Environmental topics have also been expanded and updated. The new version of Interactive

Thermodynamics (IT) is a powerful windows-based software program that now includes equation-solver, printing, graphing, data retrieval and simulation capabilities.

A brand new book,

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FUNDAMENTALS OF CHEMICAL
ENGINEERING THERMODYNAMICS
makes the abstract subject
of chemical engineering
thermodynamics more
accessible to
undergraduate students.
The subject is presented
through a problem-solving
inductive (from specific
to general) learning
approach, written in a
conversational and
approachable manner.
Suitable for either a one-
semester course or two-
semester sequence in the
subject, this book covers
thermodynamics in a
complete and

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mathematically rigorous manner, with an emphasis on solving practical engineering problems. The approach taken stresses problem-solving, and draws from best practice engineering teaching strategies. FUNDAMENTALS OF CHEMICAL ENGINEERING THERMODYNAMICS uses examples to frame the importance of the material. Each topic begins with a motivational example that is investigated in context to that topic. This framing of the material is helpful to all readers,

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particularly to global learners who require big picture insights, and hands-on learners who struggle with abstractions. Each worked example is fully annotated with sketches and comments on the thought process behind the solved problems. Common errors are presented and explained. Extensive margin notes add to the book accessibility as well as presenting opportunities for investigation. Important Notice: Media content referenced within the

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A comprehensive, best-selling introduction to the basics of engineering thermodynamics. Requiring only college-level physics and calculus, this popular book includes a realistic art program to give more realism to engineering devices and systems. A tested and proven problem-solving methodology encourages readers to think systematically and develop an orderly approach to problem

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solving: Provides readers with a state-of-the art introduction to second law analysis. Design/open-ended problems provide readers with brief design experiences that offer them opportunities to apply constraints and consider alternatives. Updated and enhanced with numerous worked-out examples and exercises, this Second Edition continues to present a thorough, concise and accurate discussion of fundamentals and principles of thermodynamics. It focuses

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on practical applications of theory and equips students with sound techniques for solving engineering problems. The treatment of the subject matter emphasizes the phenomena which are associated with the various thermodynamic processes. The topics covered are supported by an extensive set of example problems to enhance the student's understanding of the concepts introduced. The end-of-chapter problems serve to aid the learning process, and extend the

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material covered in the text by including problems characteristic of engineering design. The book is designed to serve as a text for undergraduate engineering students for a course in thermodynamics.

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technical support, please visit <http://www.wileyplus.com/support>. WileyPLUS registration cards are only included with new products. Used and rental products may not include WileyPLUS registration cards. Principles of Engineering Thermodynamics 8th Edition by Moran, Shapiro, Boettner and Bailey continues its tradition of setting the standard for teaching students how to be effective problem solvers. Now in its eighth edition, this market-leading text emphasizes the authors'

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collective teaching expertise as well as the signature methodologies that have taught entire generations of engineers worldwide. Integrated throughout the text are real-world applications that emphasize the relevance of thermodynamics principles to some of the most critical problems and issues of today, including a wealth of coverage of topics related to energy and the environment, biomedical/bioengineering, and emerging technologies. The 4th revised edition

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expands on the basic chemistry of high energy materials of the previous editions and examines new research developments, including hydrodynamics and ionic liquids.

Applications in military and civil fields are discussed. This work is of interest to advanced students in chemistry, materials science and engineering, as well as to all those working in defense technology.

[Chemistry of High-Energy Materials](#)

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Engineering Thermodynamics
Fundamentals of
Engineering
Thermodynamics, Appendices
Fundamentals of Heat and
Mass Transfer

This book summarizes the salient features of both equilibrium and steady-state thermodynamic theory under a uniform postulutory viewpoint.

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The emphasis is upon the formal aspects and logical structure of thermodynamic theory, allowing it to emerge as a coherent whole, unfettered by much of those details which - albeit indispensable in practical applications - tend to obscure this coherent structure. Largely because of this, statistical mechanics and reference to molecular structure are, barring an occasional allusion, avoided. The treatment is, therefore, 'classical', or - using a perhaps more appropriate word - 'phenomenological'. The volume almost exclusively deals with 'ideal' systems, given that the

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treatment of 'real' systems properly belongs in the realm of applied, rather than theoretical thermodynamics. For these reasons, only selected ideal systems are covered. Ideal gases are discussed extensively. The ideal solution is treated as an example of a liquid system. The amorphous ideal rubber serves as an example of a solid. The formalism developed in these sections is a model for the treatment of other, more complex systems. This short structural overview is written in the hope that a knowledge of steady-state theory will deepen

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readers' understanding of thermodynamics as a whole. Textiles are ubiquitous materials that many of us take for granted in our everyday lives. We rely on our clothes to protect us from the environment and use them to enhance our appearance. Textiles also find applications in transport, healthcare, construction, and many other industries. The revised and updated 2nd Edition of *The Chemistry of Textile Fibres* highlights the trend towards the synthesis, from renewable resources, of monomers for making synthetic fibres. It contains new

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information on the influence of legislation and the concerns of environmental organisations on the use of chemicals in the textile industry. New sections on genetically modified cotton, anti-microbial materials and spider silk have been added as well as a new chapter covering functional fibres and fabrics. This book provides a comprehensive overview of the various types of textile fibres that are available today, ranging from natural fibres to the high-performance fibres that are very technologically advanced. Readers will gain an appreciation of why particular

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types of fibre are used for certain applications through understanding the chemistry behind their properties.

Students following 'A' level courses or equivalent and first-year undergraduate students reading textile technology subjects at university will find this book a valuable source of information.

Market_Desc: Engineers Special

Features: · Provides a broader range of applications in emerging technologies such as energy and the environment, bioengineering, and horizons.·

Emphasizes modeling to support engineering decision-making

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involving thermodynamics concepts.· Develops problem-solving skills in three modes: conceptual, skill building, and design.· Encourages critical thinking and conceptual understanding with the help of exercises and Skills Developed checklists.· Contains Interactive Thermodynamics software that links realistic images with their related engineering model.

About The Book: In the new sixth edition, readers will learn how to solve thermodynamics problems with the help of a structured methodology, examples and challenging problems. The book's sound

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problem-solving approach introduces them to concepts, which are then applied to relevant engineering-based situations. The material is presented in an engaging that includes over 200 worked examples, over 1,700 end-of-chapter problems, and numerous illustrations and graphs.

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