

# Engineering Thermodynamics R K Rajput

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**Engineering Thermodynamics** R. K. Rajput 2010 Intended as a textbook for “applied” or engineering thermodynamics, or as a reference for practicing engineers, the book uses extensive in-text, solved examples and computer simulations to cover the basic properties of thermodynamics. Pure substances, the first and second laws, gases, psychrometrics, the vapor, gas and refrigeration cycles, heat transfer, compressible flow, chemical reactions, fuels, and more are presented in detail and enhanced with practical applications. This version presents the material using SI Units and has ample material on SI conversion, steam tables, and a Mollier diagram. A CD-ROM, included with the print version of the text, includes a fully functional version of QuickField (widely used in industry), as well as numerous demonstrations and simulations with MATLAB, and other third party software.

*Chemical Engineering Thermodynamics* RAO 1997

**Manufacturing Processes and Materials: Exercises**

**Engineering Thermodynamics** P. Chattopadhyay 2016-02-18 Starting with the basic concepts, the book gradually discusses important topics such as entropy, thermodynamic availability, properties of steam, real and ideal gas, power cycles and chemical equilibrium in increasing order of complexity. A lucid exposition of the fundamental concepts of thermodynamics in the book along with numerous worked-out examples and well-labelled detailed illustrations are sure to instil in the beginners a holistic understanding of the subject.

**Comprehensive Engineering Thermodynamics** R.K. Rajput 2005

**Basic Mechanical Engineering** Rajput 2002

*Thermal Science and Engineering* R.K. Rajput 2004-01-01

**CRC Handbook of Thermal Engineering, Second Edition** Frank Kreith 2017-11-08 The CRC Handbook of Thermal Engineering, Second Edition, is a fully updated version of this respected reference work, with chapters written by leading experts. Its first part covers basic concepts, equations and principles of thermodynamics, heat transfer, and fluid dynamics. Following that is detailed coverage of major application areas, such as bioengineering, energy-efficient building systems, traditional and renewable energy sources, food processing, and aerospace heat transfer topics. The latest numerical and computational tools, microscale and nanoscale engineering, and new complex-structured materials are also presented. Designed for easy reference, this new edition is a must-have volume for engineers and researchers around the globe.

**Advanced Thermodynamics** Scott Post 2017-12-06 Designed for the course in thermodynamics or for use as a reference for practicing engineers, this book includes the theoretical underpinnings and derivations necessary for advanced study. The book focuses on the mechanical and power engineering applications of thermodynamics. Mathematics is utilized as required, serving as a tool to formulate the concepts, solve problems and applications. Furthermore, numerous examples are provided to demonstrate the applications of thermodynamics for engineering problems and to enhance the use of concepts. It also includes statistical thermodynamic examples when relevant and pertinent. These examples are shown either conceptually or numerically. Features: +Numerous examples are provided to demonstrate the applications of thermodynamics for engineering problems +Includes a comprehensive and generalist view of thermodynamics, along with historical developments in the field +Presents mathematical tools such as the Legendre transformation, the Euler chain rule, the Jacobian methodology and applications for thermodynamic derivatives.

*Applied Thermodynamics* R. K. Rajput 2009-12

*Mechanical Engineering* R.K. Rajput 2006-12

*Thermal Engineering* R.K. Rajput 2005

*Engineering Thermodynamics* 2018

**Heat Transfer Phenomena and Applications** Salim Newaz Kazi 2012-10-24 Heat transfer calculations in different aspects of engineering applications are essential to aid engineering design of heat exchanging equipment. Minimizing of computational time is a challenging task faced by researchers and users. Methodology of calculations in some application areas are incorporated in this book, such as differential analysis of heat recoveries with CFD in a tube bank, heating and ventilation of equipment and methods for analytical solution of nonlinear problems. Numerical analysis is the prerequisite of design and for the manufacture of heat exchanging equipment. Some numerical and experimental information are presented with utmost skill. Similarly, the analytical solution of heat transfer is touched in this book. Study of heat transfer phenomena and applications are equally emphasized in this issue.

**Elements of Mechanical Engineering** R.K. Rajput 2005

*Power System Engineering* R. K. Rajput 2006

**Internal Combustion Engines** R.K. Rajput 2005-12

**Thermodynamics For Dummies** Mike Pauken 2011-07-12 Take some heat off the complexity of thermodynamics Does the mere thought of thermodynamics make you sweat? It doesn't have to! This hands-on guide helps you score your highest in a thermodynamics course by offering easily understood, plain-English explanations of how energy is used in things like automobiles, airplanes, air conditioners, and electric powerplants. Thermodynamics 101 – take a look at some examples of both natural and man-made thermodynamic systems and get a handle on how energy can be used to perform work Turn up the heat – discover how to use the first and second laws of thermodynamics to determine (and improve upon) the efficiency of machines Oh, behave – get the 411 on how gases behave and relate to one another in different situations, from ideal-gas laws to real gases Burn with desire – find out everything you need to know about conserving mass and energy in combustion processes Open the book and find: The laws of thermodynamics Important properties and their relationships The lowdown on solids, liquids, and gases How work and heat go hand in hand The cycles that power thermodynamic processes Chemical mixtures and reactions Ten pioneers in thermodynamics Real-world applications of thermodynamic laws and concepts Learn to: Master the concepts and principles of thermodynamics Develop the problem-solving skills used by professional engineers Ace your thermodynamics course

**Fundamentals of Chemical Engineering Thermodynamics** Themis Matsoukas 2013 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 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 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 applications to single and multiphase reactions

*A Textbook of Engineering Thermodynamics* R. K. Rajput 2010-07

**Applied Thermodynamics** Onkar Singh 2006-01-01 This Book Presents A Systematic Account Of The Concepts And Principles Of Engineering Thermodynamics And The Concepts And Practices Of Thermal Engineering. The Book Covers Basic Course Of Engineering Thermodynamics And Also Deals With The Advanced Course Of Thermal Engineering. This Book Will Meet The Requirements Of The Undergraduate Students Of Engineering And Technology Undertaking The Compulsory Course Of Engineering Thermodynamics. The Subject Matter Of Book Is Sufficient For The Students Of Mechanical Engineering/Industrial-Production Engineering, Aeronautical Engineering, Undertaking Advanced Courses In The Name Of Thermal Engineering/Heat Engineering/ Applied Thermodynamics Etc. Presentation Of The Subject Matter Has Been Made In Very Simple And Understandable Language. The Book Is Written In SI System Of Units And Each Chapter Has Been Provided With Sufficient Number Of Typical Numerical Problems Of Solved And Unsolved Questions With Answers.

**Engineering Thermodynamics: A Computer Approach (SI Units Version)** R. K. Rajput 2009-03-12 Intended as a textbook for

“applied” or engineering thermodynamics, or as a reference for practicing engineers, the book uses extensive in-text, solved examples and computer simulations to cover the basic properties of thermodynamics. Pure substances, the first and second laws, gases, psychrometrics, the vapor, gas and refrigeration cycles, heat transfer, compressible flow, chemical reactions, fuels, and more are presented in detail and enhanced with practical applications. This version presents the material using SI Units and has ample material on SI conversion, steam tables, and a Mollier diagram. A CD-ROM, included with the print version of the text, includes a fully functional version of QuickField (widely used in industry), as well as numerous demonstrations and simulations with MATLAB, and other third party software. *A Textbook of Hydraulic Machines ("Fluid Mechanics and Hydraulic Machines"- Part-II)[for Engineering Students of Various Disciplines and Competitive Examinations] in SI Units* R. K. Rajput 2008 The entire book has been thoroughly revised by adding adequate text and a large number of typical examples selected from various universities and competitive examinations question papers. Besides this, Laboratory Experiments have also been added at the end of the book to make it still more a comprehensive and complete unit in all respect.

*Engineering Thermodynamics* R. K. Rajput 2011-09

**Modern Engineering Thermodynamics** Robert T. Balmer 2010-12-20 Designed for use in a standard two-semester engineering thermodynamics course sequence. The first half of the text contains material suitable for a basic Thermodynamics course taken by engineers from all majors. The second half of the text is suitable for an Applied Thermodynamics course in mechanical engineering programs. The text has numerous features that are unique among engineering textbooks, including historical vignettes, critical thinking boxes, and case studies. All are designed to bring real engineering applications into a subject that can be somewhat abstract and mathematical. Over 200 worked examples and more than 1,300 end of chapter problems provide the use opportunities to practice solving problems related to concepts in the text. Provides the reader with clear presentations of the fundamental principles of basic and applied engineering thermodynamics. Helps students develop engineering problem solving skills through the use of structured problem-solving techniques. Introduces the Second Law of Thermodynamics through a basic entropy concept, providing students a more intuitive understanding of this key course topic. Covers Property Values before the First Law of Thermodynamics to ensure students have a firm understanding of property data before using them. Over 200 worked examples and more than 1,300 end of chapter problems offer students extensive opportunity to practice solving problems. Historical Vignettes, Critical Thinking boxes and Case Studies throughout the book help relate abstract concepts to actual engineering applications. For greater instructor flexibility at exam time, thermodynamic tables are provided in a separate accompanying booklet. Available online testing and assessment component helps students assess their knowledge of the topics. Email textbooks@elsevier.com for details.

*Textbook of Thermal Engineering* J. K. Gupta 1997

*Basic And Applied Thermodynamics* P. K. NAG 2009

*A Text Book of Automobile Engineering* R. K. Rajput 2008

**Engineering Thermodynamics Through Examples** Y.V.C. Rao 2003

**Fluid Mechanics & Hydraulic Machines** R. K. Rajput 2008 The entire book has been thoroughly revised by adding adequate text and a large number of typical examples selected from various universities and competitive examinations question papers. Besides this, Laboratory Experiments have also been added at the end of the book to make it still more a comprehensive and complete unit in all respects.

**Heat and Mass Transfer : A Textbook for the Students Preparing for B.E., B.Tech., B.Sc. Engg., AMIE, UPSC (Engg. Services) and GATE Examinations** R. K. Rajput 2007 The entire book has been thoroughly revised and a large number of solved examples under heading Additional/Typical Worked Examples (Questions selected from various Universities and Competitive Examinations) have been added at the end of the book.

**A Text Book of Power Plant Engineering** R. K. Rajput 2008

**Basic Thermodynamics** P.B. Nagaraj 2007-01-01 This Book Titled Basic Thermodynamics Makes An Attempt To Cover The Portions Keeping In View Of The Syllabus For Iiir Semester B.E., Mechanical, Prescribed By Visveswaraiah Technological University. This Book Can Also Be Useful For Students Of Other Engineering Disciplines Like B.E. In Industrial Production, Industrial Engineering Management, Automobile, Diploma In Mechanical And Ip, Iem And Automobile Engineering, Amie Etc. The Whole Book Is Written With Precise Explanations, Neat Sketches And Good Number Of Numericals. The Numerical Problems From Vtu Question Papers Have Also Been Updated.

**Fundamentals of Thermodynamics** Claus Borgnakke 2013-06-27 Now in a new edition, this book continues to set the standard for teaching readers how to be effective problem solvers, emphasizing the authors's signature methodologies that have taught over a half million students worldwide. This new edition provides a student-friendly approach that emphasizes the relevance of thermodynamics principles to some of the most critical issues of today and coming decades, including a wealth of integrated coverage of energy and the environment, biomedical/bioengineering, as well as emerging technologies. Visualization skills are developed and basic principles demonstrated through a complete set of animations that have been interwoven throughout.

*Engineering Thermodynamics* M. David Burghardt 1993 Here is a comprehensive and comprehensible treatment of engineering thermodynamics from its theoretical foundations to its applications in real situations. The thermodynamics presented will prepare students for later courses in fluid mechanics and heat transfer, and practicing engineers will find the applications helpful in their professional work. The book is appropriate for an introductory undergraduate course in thermodynamics and for a subsequent course in thermodynamic applications. The chapters dealing with steam power plants, internal combustion engines, and HVAC are unmatched. The introductory chapter on turbomachinery is also unique. A thorough development of the second law of thermodynamics is provided in chapters 7-9. The ramifications of the second law receive thorough discussion; the student not only performs calculations, but understands the implications of the calculated results. Computer models created in TK Solver accompany each chapter and are particularly useful in the application areas. The TK Solver files provided with the book can be used as written or modified and merged into models developed to analyze new problems. The book has two particularly important strengths: its readability and the depth of its treatment of applications. The readability will make the content understandable to the average students; the depth in applications will make the book suitable for applied upper-level courses as well.

*A Textbook of Heat and Mass Transfer [Concise Edition]* RK Rajput [A Textbook of Heat and Mass Transfer] is a comprehensive textbook for the students of Mechanical Engineering and a must-buy for the aspirants of different entrance examinations including GATE and UPSC. Divided into 4 parts, the book delves into the subject beginning from Basic Concepts and goes on to discuss Heat Transfer (by Convection and Radiation) and Mass Transfer. The book also becomes useful as a question bank for students as it offers university as well as entrance exam questions with solutions.

**A Textbook of Fluid Mechanics and Hydraulic Machines** R. K. Bansal 2004-12-31

**Applied Thermodynamics for Engineering Technologists** Eastop 1967

*Thermal Engineering in Power Systems* Ryoichi Amano 2008-01-01 Research and development in thermal engineering for power systems are of significant importance to many scientists who are engaged in research and design work in power-related industries and laboratories. This book focuses on variety of research areas including Components of Compressor and Turbines that are used for both electric power systems and aero engines, Fuel Cells, Energy Conversion, and Energy Reuse and Recycling Systems. To be competitive in today's market, power systems need to reduce the operating costs, increase capacity factors and deal with many other tough issues. Heat Transfer and fluid flow issues are of great significance and it is likely that a state-of-the-art edited book with reference to power systems will make a contribution for design and R&D engineers and the development towards sustainable energy systems.

**A Textbook of Strength of Materials** RK Rajput A comprehensive and lucidly written book, [Strength of Materials] captures the syllabus of most major Indian Universities and competitive examinations as well. The book discusses everything under solids and its mechanics (such as providing different aspects of stresses) and provides the reader with a deeper interest in the subject [all within aptly formed chapters]. It also contains typical examples (useful for students appearing in competitive examinations in particular and other students in general), highlights, objective type questions and a large number of unsolved examples for a complete grasp of the subject.