

Gate Chemical Engineering Books

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 Principles, Practice and Economics of Plant and Process Design

Gate Chemical Engineering Books

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AUTUMN AVILA

Process Systems Analysis and Control John Wiley & Sons

This book is meant for diploma students of chemical engineering and petroleum engineering both for their academic programmes as well as for competitive examination. This book Contains 18 chapters covering the entire syllabus of diploma course in chemical engineering and petrochemical engineering. This book in its present form has been designed to serve as an encyclopedia of chemical engineering so as to be ready reckoner apart from being useful for all types of written tests and interviews faced by chemical engineering and petrochemical engineering diploma students of the country. Since branch related subjects of petrochemical engineering are same as that of chemical engineering diploma students, so this book will be equally useful for diploma in petrochemical engineering students.

The Daily Show (The Book) McGraw-Hill College

NEW YORK TIMES BESTSELLER The complete, uncensored history of the award-winning *The Daily Show* with Jon Stewart, as told by its correspondents, writers, and host. For almost seventeen years, *The Daily Show* with Jon Stewart brilliantly redefined the borders between television comedy, political satire, and opinionated news coverage. It launched the careers of some of today's most significant comedians, highlighted the hypocrisies of the powerful, and garnered 23 Emmys. Now the show's behind-the-scenes gags, controversies, and camaraderie will be chronicled by the players themselves, from legendary host Jon Stewart to the star cast members and writers-including Samantha Bee, Stephen Colbert, John Oliver, and Steve Carell - plus some of *The Daily Show*'s most prominent guests and adversaries: John and Cindy McCain, Glenn Beck, Tucker Carlson, and many more. This oral history takes the reader behind the curtain for all the show's highlights, from its origins as Comedy Central's underdog late-night program to Trevor Noah's succession, rising from a scrappy jester in the 24-hour political news cycle to become part of the beating heart of politics-a trusted source for not only comedy but also commentary, with a reputation for calling bullshit and an ability to effect real change in the world. Through years of incisive election coverage, passionate debates with President Obama and Hillary Clinton, feuds with Bill O'Reilly and Fox, and provocative takes on Wall Street and racism, *The Daily Show* has been a cultural touchstone. Now, for the first time, the people behind the show's seminal moments come together to share their memories of the last-minute rewrites, improvisations, pranks, romances, blow-ups, and moments of Zen both on and off the set of one of America's most groundbreaking shows.

A Dictionary of Chemical Engineering Tata McGraw-Hill Education

This textbook is designed for undergraduate courses in chemical engineering and related disciplines such as biotechnology, polymer technology, petrochemical engineering, electrochemical engineering, environmental engineering, safety engineering and industrial chemistry. The chief objective of this text is to prepare students to make analysis of chemical processes through calculations and also to develop in them systematic problem-solving skills. The students are introduced not only to the application of law of combining proportions to chemical reactions (as the word 'stoichiometry' implies) but also to formulating and solving material and energy balances in processes with and without chemical reactions. The book presents the fundamentals of chemical engineering operations and processes in an accessible style to help the students gain a thorough understanding of chemical process calculations. It also covers in detail the background materials such as units and conversions, dimensional analysis and dimensionless groups, property estimation, P-V-T behaviour of fluids, vapour pressure and phase equilibrium relationships, humidity and saturation. With the help of examples, the book explains the construction and use of reference-substance plots, equilibrium diagrams, psychrometric charts, steam tables and enthalpy composition diagrams. It also elaborates on thermophysics and thermochemistry to acquaint the students with the thermodynamic principles of energy balance calculations. Key Features : • SI units

are used throughout the book. • Presents a thorough introduction to basic chemical engineering principles. • Provides many worked-out examples and exercise problems with answers. • Objective type questions included at the end of the book serve as useful review material and also assist the students in preparing for competitive examinations such as GATE.

Chemical Process Design Nirali Prakashan

Facilitates the process of learning and later mastering Aspen Plus® with step by step examples and succinct explanations Step-by-step textbook for identifying solutions to various process engineering problems via screenshots of the Aspen Plus® platforms in parallel with the related text Includes end-of-chapter problems and term project problems Includes online exam and quiz problems for instructors that are parametrized (i.e., adjustable) so that each student will have a standalone version Includes extra online material for students such as Aspen Plus®-related files that are used in the working tutorials throughout the entire textbook

Process Calculations Booksclinic Publishing

While chemical products are useful in their own right—they address the demands and needs of the masses—they also drain our natural resources and generate unwanted pollution. *Green Chemical Engineering: An Introduction to Catalysis, Kinetics, and Chemical Processes* encourages minimized use of non-renewable natural resources and fosters maximized pollution prevention. This text stresses the importance of developing processes that are environmentally friendly and incorporate the role of green chemistry and reaction engineering in designing these processes. Focused on practical application rather than theory, the book integrates chemical reaction engineering and green chemical engineering, and is divided into two sections. The first half of the book covers the basic principles of chemical reaction engineering and reactor design, while the second half of the book explores topics on green reactors, green catalysis, and green processes. The authors mix in elaborate illustrations along with important developments, practical applications, and recent case studies. They also include numerous exercises, examples, and problems covering the various concepts of reaction engineering addressed in this book, and provide MATLAB® software used for developing computer codes and solving a number of reaction engineering problems. Consisting of six chapters organized into two sections, this text: Covers the basic principles of chemical kinetics and catalysis Gives a brief introduction to classification and the various types of chemical reactors Discusses in detail the differential and integral methods of analysis of rate equations for different types of reactions Presents the development of rate equations for solid catalyzed reactions and enzyme catalyzed biochemical reactions Explains methods for estimation of kinetic parameters from batch reactor data Details topics on homogeneous reactors Includes graphical procedures for the design of multiple reactors Contains topics on heterogeneous reactors including catalytic and non-catalytic reactors Reviews various models for non-catalytic gas-solid and gas-liquid reactions Introduces global rate equations and explicit design equations for a variety of non-catalytic reactors Gives an overview of novel green reactors and the application of CFD technique in the modeling of green reactors Offers detailed discussions of a number of novel reactors Provides a brief introduction to CFD and the application of CFD Highlights the development of a green catalytic process and the application of a green catalyst in the treatment of industrial effluent Comprehensive and thorough in its coverage, *Green Chemical Engineering: An Introduction to Catalysis, Kinetics, and Chemical Processes* explains the basic concepts of green engineering and reactor design fundamentals, and provides key knowledge for students at technical universities and professionals already working in the industry.

Tools For Chemical Product Design John Wiley & Sons

Taking greater advantage of powerful computing capabilities over the last several years, the development of fundamental information and new models has led to major advances in nearly every aspect of chemical engineering. *Albright's Chemical Engineering Handbook* represents a reliable source of updated methods, applications, and fundamental concepts that will continue to play a significant role in driving new research and improving plant design and operations. Well-rounded,

concise, and practical by design, this handbook collects valuable insight from an exceptional diversity of leaders in their respective specialties. Each chapter provides a clear review of basic information, case examples, and references to additional, more in-depth information. They explain essential principles, calculations, and issues relating to topics including reaction engineering, process control and design, waste disposal, and electrochemical and biochemical engineering. The final chapters cover aspects of patents and intellectual property, practical communication, and ethical considerations that are most relevant to engineers. From fundamentals to plant operations, Albright's Chemical Engineering Handbook offers a thorough, yet succinct guide to day-to-day methods and calculations used in chemical engineering applications. This handbook will serve the needs of practicing professionals as well as students preparing to enter the field.

The Autobiography of Nelson Mandela Arihant Publications India limited

This textbook is intended for courses in heat transfer for undergraduates, not only in chemical engineering and related disciplines of biochemical engineering and chemical technology, but also in mechanical engineering and production engineering. The author provides the reader with a very thorough account of the fundamental principles and their applications to engineering practice, including a survey of the recent developments in heat transfer equipment. The three basic modes of heat transfer - conduction, convection and radiation - have been comprehensively analyzed and elucidated by solving a wide range of practical and design-oriented problems. A whole chapter has been devoted to explain the concept of the heat transfer coefficient to give a feel of its importance in tackling problems of convective heat transfer. The use of the important heat transfer correlations has been illustrated with carefully selected examples.

GEOMATICS ENGINEERING PHI Learning Pvt. Ltd.

Scope of science and technology is expanding at an exponential rate and so is the need of skilled professionals i.e., Engineers. To stand out of the crowd amidst rising competition, many of the engineering graduates aim to crack GATE, IES and PSUs and pursue various post graduate Programmes. Handbook series as its name suggests is a set of Best-selling Multi-Purpose Quick Revision resource books, those are devised with anytime, anywhere approach. It's a compact, portable revision aid like none other. It contains almost all useful Formulae, equations, Terms, definitions and many more important aspects of these subjects. Mechanical Engineering Handbook has been designed for aspirants of GATE, IES, PSUs and Other Competitive Exams. Each topic is summarized in the form of key points and notes for everyday work, problem solving or exam revision, in a unique format that displays concepts clearly. The book also displays formulae and circuit diagrams clearly, places them in context and crisply identifies and describes all the variables involved. Mechanics, Strength of Materials, Theory of Machine, Machine design, Fluid Mechanics, Heat and Mass Transfer, Thermodynamics, Power Plant Engineering, Refrigeration and Air Conditioning, Internal Combustion engine, Material Science and Production Engineering, Industrial Engineering, Element of Computation.

From Consumer Products to Biomedicine Universities Press

Properties and Handling of Particulate Solids, Conveyors, Mixing of Solids and Pastes, Size Reduction, Mechanical Separations: Screening, Filtration, Separation Based on Motion of Particulate through the Fluids, Mixing and Agitation, Fluidization, Beneficiation Process

GATE 2021 - Guide - Chemical Engineering Little, Brown

In the preparation of this book, my aim has been to present the text in a sequential and lucid manner, containing all essentials of practical surveying. The book proves to be a valuable source of study to those who are preparing for GATE and other competitive examinations. This book contains Nine chapters. The most outstanding feature of the book is the condensation of the exhaustive theory into a systematic, point wise pattern and insertions of explanatory notes particularly with reference to the more common surveying operations for easy learning of the students. A large portion of the material presented in this book has been derived from the work of others. Their contribution is greatly acknowledged. An attempt has been made to also include all the recent developments in the field of surveying.

Process Dynamics and Control GATE 2021 - Guide - Chemical Engineering PRINCIPLES OF MASS TRANSFER AND SEPERATION PROCESSES

The book that inspired the major new motion picture *Mandela: Long Walk to Freedom*. Nelson Mandela is one of the great moral and political leaders of our time: an international hero whose lifelong dedication to the fight against racial oppression in South Africa won him the Nobel Peace Prize and the presidency of his country. Since his triumphant release in 1990 from more than a quarter-century of imprisonment, Mandela has been at the center of the most compelling and inspiring political drama in the world. As president of the African National Congress and head of South Africa's anti-apartheid movement, he was instrumental in moving the nation toward multiracial government and majority rule. He is revered everywhere as a vital force in the fight for human rights and racial equality. **LONG WALK TO FREEDOM** is his moving and exhilarating autobiography, destined to take its place among the finest memoirs of history's greatest figures. Here for the first time, Nelson Rolihlahla Mandela tells the extraordinary story of his life--an epic of struggle, setback, renewed hope, and ultimate triumph.

STOICHIOMETRY AND PROCESS CALCULATIONS PHI Learning Pvt. Ltd.

The third edition of Process Systems Analysis and Control retains the excellent style for which this book is well known: short, clearly written chapters. The book is an ideal teaching and learning tool for a semester-long undergraduate chemical engineering course in process dynamics and control. It avoids the encyclopedic approach that many texts on this topic fall into. The third edition is updated to include new topics, including model predictive control and digital control, that are introduced at a level appropriate for the undergraduate chemical engineering curriculum. Computer examples using MATLAB and Simulink have been introduced throughout the book to supplement and enhance standard hand-solved examples. These packages allow the easy construction of block diagrams and quick analysis of control concepts to enable the student to explore "what-if" type problems that would be much more difficult and time consuming by hand. Many new homework problems have been added to each chapter. The new problems are a mixture of hand-solved and computer exercises. One-page capsule summaries have been added to the end of each chapter to help students review and study the most important concepts in each chapter.

HEAT TRANSFER PHI Learning Pvt. Ltd.

Best-selling introductory chemical engineering book - now updated with far more coverage of biotech, nanotech, and green engineering • Thoroughly covers material balances, gases, liquids, and energy balances. • Contains new biotech and bioengineering problems throughout. • Adds new examples and homework on nanotechnology, environmental engineering, and green engineering. • All-new student projects chapter. • Self-assessment tests, discussion problems, homework, and glossaries in each chapter. Basic Principles and Calculations in Chemical Engineering, 8/e, provides a complete, practical, and student-friendly introduction to the principles and techniques of modern chemical, petroleum, and environmental engineering. The authors introduce efficient and consistent

methods for solving problems, analyzing data, and conceptually understanding a wide variety of processes. This edition has been revised to reflect growing interest in the life sciences, adding biotechnology and bioengineering problems and examples throughout. It also adds many new examples and homework assignments on nanotechnology, environmental, and green engineering, plus many updates to existing examples. A new chapter presents multiple student projects, and several chapters from the previous edition have been condensed for greater focus. This text's features include: • Thorough introductory coverage, including unit conversions, basis selection, and process measurements. • Short chapters supporting flexible, modular learning. • Consistent, sound strategies for solving material and energy balance problems. • Key concepts ranging from stoichiometry to enthalpy. • Behavior of gases, liquids, and solids. • Many tables, charts, and reference appendices. • Self-assessment tests, thought/discussion problems, homework problems, and glossaries in each chapter.

Chemistry of Catalytic Processes BoD - Books on Demand

A Dictionary of Chemical Engineering is one of the latest additions to the market leading Oxford Paperback Reference series. In over 3,400 concise and authoritative A to Z entries, it provides definitions and explanations for chemical engineering terms in areas including: materials, energy balances, reactions, separations, sustainability, safety, and ethics. Naturally, the dictionary also covers many pertinent terms from the fields of chemistry, physics, biology, and mathematics. Useful entry-level web links are listed and regularly updated on a dedicated companion website to expand the coverage of the dictionary. Comprehensively cross-referenced and complemented by over 60 line drawings, this excellent new volume is the most authoritative dictionary of its kind. It is an essential reference source for students of chemical engineering, for professionals in this field (as well as related disciplines such as applied chemistry, chemical technology, and process engineering), and for anyone with an interest in the subject.

Elsevier

Written by a highly regarded author with industrial and academic experience, this new edition of an established bestselling book provides practical guidance for students, researchers, and those in chemical engineering. The book includes a new section on sustainable energy, with sections on carbon capture and sequestration, as a result of increasing environmental awareness; and a companion website that includes problems, worked solutions, and Excel spreadsheets to enable students to carry out complex calculations.

A Textbook of Fluid Mechanics and Hydraulic Machines John Wiley & Sons

Part I: Process design -- Introduction to design -- Process flowsheet development -- Utilities and energy efficient design -- Process simulation -- Instrumentation and process control -- Materials of construction -- Capital cost estimating -- Estimating revenues and production costs -- Economic evaluation of projects -- Safety and loss prevention -- General site considerations -- Optimization in design -- Part II: Plant design -- Equipment selection, specification and design -- Design of pressure vessels -- Design of reactors and mixers -- Separation of fluids -- Separation columns (distillation, absorption and extraction) -- Specification and design of solids-handling equipment -- Heat transfer equipment -- Transport and storage of fluids.

GATE 12 Years' Solved Papers Year-wise 2010-2021 (For 2022 Exam) CRC Press

This textbook is targeted to undergraduate students in chemical engineering, chemical technology, and biochemical engineering for courses in mass transfer, separation processes, transport processes, and unit operations. The principles of mass transfer, both diffusional and convective have been comprehensively discussed. The application of these principles to separation processes is explained. The more common separation processes used in the chemical industries are individually described in separate chapters. The book also provides a good understanding of the construction, the operating principles, and the selection criteria of separation equipment. Recent developments in equipment have been included as far as possible. The procedure of equipment design and sizing has been illustrated by simple examples. An overview of different applications and aspects of membrane separation has also been provided. 'Humidification and water cooling', necessary in every process industry, is also described. Finally, elementary principles of 'unsteady state diffusion' and mass transfer accompanied by a chemical reaction are covered. **SALIENT FEATURES :** • A balanced coverage of theoretical principles and applications. • Important recent developments in mass transfer equipment and practice are included. • A large number of solved problems of varying levels of complexities showing the applications of the theory are included. • Many end-chapter exercises. • Chapter-wise multiple choice questions. • An Instructors manual for the teachers.

The Encyclopaedia Britannica Oswaal Books and Learning Private Limited

Author's purpose is "to provide a vehicle for teaching, either through a formal course or through self-study, the techniques of, and principles of equipment design for, the mass-transfer operations of chemical engineering." As before, these operations are largely the responsibility of the chemical engineer, but increasingly practitioners of other engineering disciplines are finding them necessary for their work. This is especially true for those engaged in pollution control and environment protection, where separation processes predominate, and in, for example, extractive metallurgy, where more sophisticated and diverse methods of separation are increasingly relied upon.

Introduction to Process Calculations Stoichiometry John Wiley & Sons

This book offers several solutions or approaches in solving mass transfer problems for different practical chemical engineering applications: measurements of the diffusion coefficients, estimation of the mass transfer coefficients, mass transfer limitation in separation processes like drying, extractions, absorption, membrane processes, mass transfer in the microbial fuel cell design, and problems of the mass transfer coupled with the heterogeneous combustion. I believe this book can provide its readers with interesting ideas and inspirations or direct solutions of their particular problems.

FT Press

The goal of this textbook is to provide first-year engineering students with a firm grounding in the fundamentals of chemical and bioprocess engineering. However, instead of being a general overview of the two topics, Fundamentals of Chemical and Bioprocess Engineering will identify and focus on specific areas in which attaining a solid competency is desired. This strategy is the direct result of studies showing that broad-based courses at the freshman level often leave students grappling with a lot of material, which results in a low rate of retention. Specifically, strong emphasis will be placed on the topic of material balances, with the intent that students exiting a course based upon this textbook will be significantly higher on Bloom's Taxonomy (knowledge, comprehension, application, analysis and synthesis, evaluation, creation) relating to material balances. In addition, this book also provides students with a highly developed ability to analyze problems from the material balances perspective, which leaves them with important skills for the future. The textbook consists of numerous exercises and their solutions. Problems are classified by their level of difficulty. Each chapter has references and selected web pages to vividly illustrate each example. In addition, to engage students and increase their comprehension and rate of retention, many examples involve real-world situations.

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