

Text Book Of Engineering Chemistry By Ss Dara S Chand

This new volume is devoted to molecular chemistry and its applications to the fields of biology. It looks at the integration of molecular chemistry with biomolecular engineering, with the goal of creating new biological or physical properties to address scientific or societal challenges. It takes a both multidisciplinary and interdisciplinary perspective on the interface between molecular biology, biophysical chemistry, and chemical engineering. Molecular Chemistry and Biomolecular Engineering: Integrating Theory and Research with Practice provides effective support for the development of the laboratory and data analysis skills that researchers will draw on time and again for the practical aspects and also gives a solid grounding in the broader transferable skills.

A chemical engineer's guide to managing and minimizing environmental impact. Chemical processes are invaluable to modern society, yet they generate substantial quantities of wastes and emissions, and safely managing these wastes costs tens of millions of dollars annually. Green Engineering is a complete professional's guide to the cost-effective design, commercialization, and use of chemical processes in ways that minimize pollution at the source, and reduce impact on health and the environment. This book also offers powerful new insights into environmental risk-based considerations in design of processes and products. First conceived by the staff of the U.S. Environmental Protection Agency, Green Engineering draws on contributions from many leaders in the field and introduces advanced risk-based techniques including some currently in use at the EPA. Coverage includes: Engineering chemical processes, products, and systems to reduce environmental impacts Approaches for evaluating emissions and hazards of chemicals and processes Defining effective environmental performance targets Advanced approaches and tools for evaluating environmental fate Early-stage design and development techniques that minimize costs and environmental impacts In-depth coverage of unit operation and flowsheet analysis The economics of environmental improvement projects Integration of chemical processes with other material processing operations Lifecycle assessments: beyond the boundaries of the plant Increasingly, chemical engineers are faced with the challenge of integrating environmental objectives into design decisions. Green Engineering gives them the technical tools they need to do so.

This updated edition of Gesser's classic textbook has undergone a full revision and now has the latest material, including new chapters on semiconductors and nanotechnology. It includes a supplementary laboratory section with stepwise experimental protocols.

Engineering Chemistry is designed as a textbook for first year undergraduate engineering students. Besides covering the revised AICTE syllabus, it fulfils the syllabus requirements of universities across India. Divided into two parts, the book provides a comprehensive discussion of all relevant and important topics related to basic and applied chemistry.

An Introduction to Materials Engineering and Science for Chemical and Materials Engineers

Fundamental Concepts for First-Year Students

Textbook of Environmental Chemistry

A Pathway to Sustainability

An Introductory Text and Reference for Engineers and Chemists

Water And Its Industrial Applications | Fuels And Combustion | Lubricants | Cement And Refractories| Polymers | Instrumental Techniques In Chemical Analysis | Water Analysis Techniques | Question Bank

Chemical Engineering Design, Second Edition, deals with the application of chemical engineering principles to the design of chemical processes and equipment. Revised throughout, this edition has been specifically developed for the U.S. market. It provides the latest US codes and standards, including API, ASME and ISA design codes and ANSI standards. It contains new discussions of conceptual plant design, flowsheet development, and revamp design; extended coverage of capital cost estimation, process costing, and economics; and new chapters on equipment selection, reactor design, and solids handling processes. A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data, and Excel spreadsheet calculations, plus over 150 Patent References for downloading from the companion website. Extensive instructor resources, including 1170 lecture slides and a fully worked solutions manual are available to adopting instructors. This text is designed for chemical and biochemical engineering students (senior undergraduate year, plus appropriate for capstone design courses where taken, plus graduates) and lecturers/tutors, and professionals in industry (chemical process, biochemical, pharmaceutical, petrochemical sectors). New to this edition: Revised organization into Part I: Process Design, and Part II: Plant Design. The broad themes of Part I are flowsheet development, economic analysis, safety and environmental impact and optimization. Part II contains chapters on equipment design and selection that can be used as supplements to a lecture course or as essential references for students or practicing engineers working on design projects. New discussion of conceptual plant design, flowsheet development and revamp design Significantly increased coverage of capital cost estimation, process costing and economics New chapters on equipment selection, reactor design and solids handling processes New sections on fermentation, adsorption, membrane separations, ion exchange and chromatography Increased coverage of batch processing, food, pharmaceutical and biological processes All equipment chapters in Part II revised and updated with current information Updated throughout for latest US codes and standards, including API, ASME and ISA design codes and ANSI standards Additional worked examples and homework problems The most complete and up to date coverage of equipment selection 108 realistic commercial design projects from diverse industries A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data and Excel spreadsheet calculations plus over 150 Patent References, for downloading from the companion website Extensive instructor resources: 1170 lecture slides plus fully worked solutions manual available to adopting instructors

This new book brings together innovative research, new concepts, and novel developments in the application of

informatics tools for applied chemistry and computer science. It presents a modern approach to modeling and calculation and also looks at experimental design in applied chemistry and chemical engineering. The volume discusses the developments of advanced chemical products and respective tools to characterize and predict the chemical material properties and behavior. Providing numerous comparisons of different methods with one another and with different experiments, not only does this book summarize the classical theories, but it also exhibits their engineering applications in response to the current key issues. Recent trends in several areas of chemistry and chemical engineering science, which have important application to practice, are discussed. Applied Chemistry and Chemical Engineering: Volume 1: Mathematical and Analytical Techniques provides valuable information for chemical engineers and researchers as well as for graduate students. It demonstrates the progress and promise for developing chemical materials that seem capable of moving this field from laboratory-scale prototypes to actual industrial applications. Volume 2 will focus principles and methodologies in applied chemistry and chemical engineering.

Designed as an undergraduate-level textbook in Chemical Engineering, this student-friendly, thoroughly class-room tested book, now in its second edition, continues to provide an in-depth analysis of chemical engineering thermodynamics. The book has been so organized that it gives comprehensive coverage of basic concepts and applications of the laws of thermodynamics in the initial chapters, while the later chapters focus at length on important areas of study falling under the realm of chemical thermodynamics. The reader is thus introduced to a thorough analysis of the fundamental laws of thermodynamics as well as their applications to practical situations. This is followed by a detailed discussion on relationships among thermodynamic properties and an exhaustive treatment on the thermodynamic properties of solutions. The role of phase equilibrium thermodynamics in design, analysis, and operation of chemical separation methods is also deftly dealt with. Finally, the chemical reaction equilibria are skillfully explained. Besides numerous illustrations, the book contains over 200 worked examples, over 400 exercise problems (all with answers) and several objective-type questions, which enable students to gain an in-depth understanding of the concepts and theory discussed. The book will also be a useful text for students pursuing courses in chemical engineering-related branches such as polymer engineering, petroleum engineering, and safety and environmental engineering. New to This Edition • More Example Problems and Exercise Questions in each chapter • Updated section on Vapour-Liquid Equilibrium in Chapter 8 to highlight the significance of equations of state approach • GATE Questions up to 2012 with answers

Elements of Polymer Science & Engineering

Material Balance and Process Calculations: A Book for Chemical Engineers and Chemists

Chemistry for Engineering Students

Applied Chemistry and Chemical Engineering, Volume 1

Green Engineering

This book is written strictly for the first and second semester diploma students of engineering chemistry according to the revised syllabus. It aims to provide a thorough understanding of the chemical concepts, theories and principles in Engineering Chemistry in a clear and concise manner, so that the average students are able to grasp the intricacies of the subject. Explaining general concepts of atomic structure and chemical bond, the book covers all advanced topics such as acid-base theory, concentration of solutions, electrochemistry, corrosion, metallurgy, hydrocarbons, sources of water and its treatment, lubricants and adhesives, fuel, polymer and environmental chemistry. Each theoretical concept is well supported by illustrative examples. Besides, the book provides a large number of solved problems to reinforce the theoretical understanding of concepts. Each chapter contains glossary terms and provides short questions and long questions for practice. Previous year question papers and model questions with answers are appended at the end of the book to help students ace in examinations. Physical Chemistry for Engineering and Applied Sciences is the product of over 30 years of teaching first-year Physical Chemistry as part of the Faculty of Applied Science and Engineering at the University of Toronto. Designed to be as rigorous as compatible with a first-year student's ability to understand, the text presents detailed step-by-step

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.

A TEXTBOOK OF ENGINEERING CHEMISTRY. Chand Publishing

Introduction to Chemical Engineering

A Textbook for Engineers and Technologists

Textbook Of Engineering Chemistry (2Nd Edition)

A Textbook of Engineering Chemistry (For 1st Semester of Anna University)

Green Chemistry and Engineering

Due to its simple language, straightforward approach to explaining concepts, and the right kind of examples, this book has established itself as student's companion in almost all leading universities in India. With its authentic text and a large number of questions taken from various university examinations, coupled with regular revisions, the book has served well for more than 20 years now. In the attempt to keep the book aligned with various syllabuses and to reach out to students of more and more universities, more details have been included for the fourth edition,

which has been completely recast and reformatted. The book is meant for the first year engineering degree courses of Indian universities.

STRENGTH OF THE BOOK • Numerous solved problems • Large number of questions from various universities for exhaustive practice • Boxes featuring important and popular aspects of the topic **NEW IN THE FOURTH EDITION** • Completely recast and reformatted text • New topics like: Cooling curves for one- and two-component eutectics; Electrode polarization and overvoltage; Decomposition potential; Solar cells; Pitting corrosion; Metallurgy and medicine; Reverse osmosis; Bioengineering.

Engineering Chemistry: A Textbook is primarily intended for Undergraduate Students of all disciplines of Engineering & Technology. This book introduces the fundamental concepts in a simple, comprehensive and illustrative manner. The book contains 11 chapters, providing a core course of engineering chemistry. Each chapter starts with a brief introduction, history of the topic followed by meticulous discussions on each topic and practice zone containing solved numerical problems, unsolved numerical problems and questions from examinations. Most of the topics include latest information and includes 394 diagrams, 58 tables and more than 100 solved numerical problems.

Written in lucid language, the book offers a detailed treatment of fundamental concepts of chemistry and its engineering applications.

Engineers And Scientists Are Required To Master Chemical Principles Because Many Of The Problems They Encounter Involve Chemical Processes Or The Composition And Properties Of Materials. This Book Is Designed To Present The Fundamental Concepts Of Chemistry As They Relate To Modern Engineering Applications. As An Up-To-Date Reference It Can Be Used By Practicing Engineers, Or As A Text In Standard University Courses In Engineering Chemistry, Chemical Engineering, And Chemistry For Engineers. It Has Been Divided Into Sixteen Chapters Covering All The Subjects Of Engineering Chemistry Such As Inorganic, Organic, Synthetic, Physical, Applied, Industrial, Spectroscopic And Environmental. Applications Of Modern Chemical Theory, Illustrations, Examples, And Exercises Have Been Included.

Advanced Engineering Chemistry

Ramblings of A Chemical Engineer: Learn Something about Chemical Engineering that is Not Inside Your Textbook. Explore Interesting, Challenging, Intri

Physical Chemistry for Engineering and Applied Sciences

Environmentally Conscious Design of Chemical Processes

General Chemistry for Engineers

Textbook of Environmental Chemistry has been designed to provide fundamental knowledge of the principles related to environment and its chemistry so as to meet the challenging requirements of students as well as teachers of Environmental Sciences, Environmental Chemistry and Environmental Studies at graduate, postgraduate, polytechnic, and engineering levels at all Indian Universities. This book is also useful for the students and professors of general science. The book explores biological resources and their relationship with physical and chemical aspects of the environment. Due emphasis has been given to the regional as well as global environmental problems like water, air, soil and noise pollution, their types and sources, effects on the ecosystem. Key Features * The book deals with principles and chemical reactions that govern the behaviour of water, air and soil environment. * The book emphasizes on the origin of various pollutants and their control. * New and current fields of environmental science - Green Chemistry, Environmental Biotechnology, Polymers for Environment. * It covers environmental impact, planning and laws to help readers understand how policies and plans are formulated to protect our environment. * *Environmental pollution abatement engineering and technology has been discussed in-depth*

General Chemistry for Engineers explores the key areas of chemistry needed for engineers. This book develops material from the basics to more advanced areas in a systematic fashion. As the material is presented, case studies relevant to engineering are included that demonstrate the strong link between chemistry and the various areas of engineering. Serves as a unique chemistry reference source for professional engineers Provides the chemistry principles required by various engineering disciplines Begins with an 'atoms first' approach, building from the simple to the more complex chemical concepts Includes engineering case studies connecting chemical principles to solving actual engineering problems Links chemistry to contemporary issues related to the interface between chemistry and engineering practices

Engineering Chemistry presents the subject with the aim of providing clear and sufficient understanding of chemistry To The students of engineering, As the same is imperative for any successful engineer. Some chapters in the book deal with the basic principles of chemistry while others are focused on its applied aspects, providing the correct interphase between the principles of chemistry and engineering. Key Features: * Chapters cover both basic principles of chemistry as also its applied aspects. * Written in easy self-explanatory language and in depth at the same time. * Clear diagrams and solved numerical problems included wherever required. * Review questions provided at the end of each chapter. * A separate section 'Laboratory Manual' in Engineering Chemistry comprising 12 experiments is appended at the end of the book.

The author was previously a practicing engineer. Being very vague about the chemical engineering industry during his student life urged him to improve the situation. Wouldn't it be nice if somebody can tell and share what they can expect from the industry? It will be some sort of a chemical engineering informal education for the students and other junior engineers. That is why the author progressively and continuously shares some of his experiences in this book. The author sincerely hopes it can provide at least some useful information for fellow young chemical engineers and chemical engineering students. He also believes it's a good thing if other professional and practicing engineers out there can do the same for others to learn. It will be a great contribution. The book contains the author's experience sharing from his research in university, a bit of oil and gas exposure as well as oil and fats industry. The book tagline is "Learn something about chemical engineering that is not in your textbook."Reviews: "I read Zaki's writings from 2008, it has been 10 years that I am following his interesting web based publications. There is always something to learn from his writings and more importantly those are not in standard text books. Zaki is one of the rare chemical engineering professionals who understand the value of dissemination of knowledge to public as well as young chemical professionals.

Generally in traditional engineering fields such as chemical and process engineering, knowledge is being transferred one-to-one which is quite slow and inefficient. However, effort of Zaki and such knowledge sharing professionals will change the eco-system in chemical engineering for good!" - Dr. Thushara Subasinghe, University of Moratuwa, Sri Lanka"
Ramblings of A Chemical Engineer! The title says it all. It is a compilation of wonderful stories of life as a student and chemical engineer. Zaki has managed to shine a light on chemical engineering world by sharing good stories, wonderful experiences, topical issues and much more. And all this in an entertaining way! Thank you Zaki, for putting your experiences 'in word' so many of us can learn, get inspired, and be motivated by your pen!"- Dr. Aziatul Niza Sadikin, School of Chemical & Energy Engineering, Universiti Teknologi Malaysia
"Ramblings of A Chemical Engineer is a good book which features the real life experience sharing by Zaki & indeed beneficial to students, young engineer or academics who have not had opportunities to be in the chemical process or related industries.

Thumbs up to the author!"- Dr. Siti Shawalliah Idris, Universiti Teknologi MARA "I enjoyed this book very much and would recommend it to any chemical engineering student, junior chemical engineer or just chemical engineering enthusiast regardless of age."- Tarig Hussein, CTP Trainee in an American multinational engineering, procurement, construction and installation company based in Europe. About the Author: Zaki Yamani B. Zakaria has been fond to be a chemical engineer since he was 14 and in 1999 he earned his Chemical Engineering bachelor degree. He has been in various industries such as oil and gas as well as oil and fats. He realized that there was lack of information or sharing about real chemical engineering career, experiences and exposure from practicing engineer; and that was the reason he started Chemical Engineering World blog in 2006, which received overwhelming responses from chemical engineering students and junior engineers around the globe. In 2008, he started Chemical Engineering Facebook Page which managed to attract 29k followers. His personal mission is to help build interest, excitement and enhance knowledge within the chemical engineering community in line with his favourite tagline, "Learn something about chemical engineering that is not in your textbook."

Chemical and Bioprocess Engineering

Mathematical and Analytical Techniques

Biochemical Engineering

For Chemical Engineers and Students

Chemical Engineering Design

Through a vibrant four-color design, Chemistry for Engineers presents chemistry concepts most relevant to engineers and demonstrates them within an applied context. A thorough problem-solving and conceptually driven approach helps engineering students develop the quantitative and qualitative skills necessary to succeed in the course and in their fields. Features that emphasize skills, concepts, and engineering applications appear throughout each chapter, providing students with multiple opportunities to hone their understanding of chapter topics. For those students who need it, an introductory chapter, called "Fundamentals," provides a quick review of basic chemistry and math concepts. A complete technology package accompanies the text and helps make teaching and learning chemistry more dynamic. Resources include the HM Testing program powered by Diploma, the HM ClassPresent CD with scaleable videos and animations, and the Online Study Center for students with quizzes and tutorials. Skill Development Objectives at the beginning of the chapter outline key skills students should master by the end of the chapter. Worked Examples, titled for easy reference, address specific section topics and model a step-by-step approach to problem solving. Each example includes Plan and Implementation sections followed by a reference to related end-of-chapter exercises. Concept Questions challenge students to further consider the ideas underlying the chemistry in a section and act either as a review of the material just learned or as a prompt to build on a concept and apply it to a particular situation. Apply It interactive exercises require students to apply concepts to real-life situations. One activity, for example, asks students to bend copper and steel wire to get a tangible sense of their properties. The end-of-chapter material includes the Checklist for Review with key terms and key equations, the Chapter Summary, the Key Idea in the chapter, Concepts You Should Understand, Operational Skills, Review Exercises, Conceptual Exercises, engineering-related Applied Exercises, and Integrative Exercises. The appendix presents a series of data tables, a list of metal ions, and a list of acids for reference throughout the course.

An Introduction to Materials Engineering and Science for Chemical and Materials Engineers provides a solid background in materials engineering and science for chemical and materials engineering students. This book: Organizes topics on two levels; by engineering subject area and by materials class. Incorporates instructional objectives, active-learning principles, design-oriented problems, and web-based information and visualization to provide a unique

educational experience for the student. Provides a foundation for understanding the structure and properties of materials such as ceramics/glass, polymers, composites, bio-materials, as well as metals and alloys. Takes an integrated approach to the subject, rather than a "metals first" approach. Chemical processes provide a diverse array of valuable products and materials used in applications ranging from health care to transportation and food processing. Yet these same chemical processes that provide products and materials essential to modern economies, also generate substantial quantities of wastes and emissions. Green Chemistry is the utilization of a set of principles that reduces or eliminate the use or generation of hazardous substances in design. Due to extravagant costs needed to managing these wastes, tens of billions of dollars a year, there is a need to propose a way to create less waste. Emission and treatment standards continue to become more stringent, which causes these costs to continue to escalate. Green Chemistry and Engineering describes both the science (theory) and engineering (application) principles of Green Chemistry that lead to the generation of less waste. It explores the use of milder manufacturing conditions resulting from the use of smarter organic synthetic techniques and the maintenance of atom efficiency that can temper the effects of chemical processes. By implementing these techniques means less waste, which will save industry millions of dollars over time. Chemical processes that provide products and materials essential to modern economies generate substantial quantities of wastes and emissions, this new book describes both the science (theory) and engineering (application) principles of Green Chemistry that lead to the generation of less waste. This book contains expert advice from scientists around the world, encompassing developments in the field since 2000. Aids manufacturers, scientists, managers, and engineers on how to implement ongoing changes in a vast developing field that is important to the environment and our lives. Although many were skeptical of the green chemistry movement at first, it has become a multimillion-dollar business. In preventing the creation of hazardous wastes, laboratories and corporations can save millions in clean up efforts and related health costs. This book supplies students with concepts commonly taught in undergraduate general chemistry and general engineering courses, but with a green perspective. It is unique in presenting an integrated discussion of green chemistry and engineering from first principles – not as an afterthought. Real-world examples show creative problem solving based on the latest issues.

A Textbook for Engineers, Chemists and Biologists
ENGINEERING CHEMISTRY FOR DIPLOMA
Molecular Chemistry and Biomolecular Engineering
Engineering Chemistry (Ptu)

*Tremendous developments in the field of polymer science, its growing importance, and an increase in the number of polymer science courses in both physics and chemistry departments have led to the revision of the First Edition. This new edition addresses subjects as spectroscopy (NMR), dynamic light scattering, and other modern techniques unknown before the publication of the First Edition. The Second Edition focuses on both theory (physics and chemistry) and engineering applications which make it useful for chemistry, physics, and chemical engineering departments. Key Features * Focuses on applications of polymer chemistry, engineering and technology * Explains terminology, applications and versatility of synthetic polymers * Connects polymerization chemistry with engineering applications * Leads reader from basic concepts to technological applications * Highlights the vastly valuable resource of polymer technology * Uses quantitative examples and problems to fully develop concepts * Contains practical lead-ins to emulsion polymerization, viscoelasticity and polymer rheology*

A Textbook of Engineering Chemistry

Completely revised, updated, and enlarged, this second edition now contains a subchapter on biorecognition assays, plus a chapter on

bioprocess control added by the new co-author Jun-ichi Horiuchi, who is one of the leading experts in the field. The central theme of the textbook remains the application of chemical engineering principles to biological processes in general, demonstrating how a chemical engineer would address and solve problems. To create a logical and clear structure, the book is divided into three parts. The first deals with the basic concepts and principles of chemical engineering and can be read by those students with no prior knowledge of chemical engineering. The second part focuses on process aspects, such as heat and mass transfer, bioreactors, and separation methods. Finally, the third section describes practical aspects, including medical device production, downstream operations, and fermenter engineering. More than 40 exemplary solved exercises facilitate understanding of the complex engineering background, while self-study is supported by the inclusion of over 80 exercises at the end of each chapter, which are supplemented by the corresponding solutions. An excellent, comprehensive introduction to the principles of biochemical engineering.

The field of chemical engineering is undergoing a global “renaissance,” with new processes, equipment, and sources changing literally every day. It is a dynamic, important area of study and the basis for some of the most lucrative and integral fields of science. Introduction to Chemical Engineering offers a comprehensive overview of the concept, principles and applications of chemical engineering. It explains the distinct chemical engineering knowledge which gave rise to a general-purpose technology and broadest engineering field. The book serves as a conduit between college education and the real-world chemical engineering practice. It answers many questions students and young engineers often ask which include: How is what I studied in the classroom being applied in the industrial setting? What steps do I need to take to become a professional chemical engineer? What are the career diversities in chemical engineering and the engineering knowledge required? How is chemical engineering design done in real-world? What are the chemical engineering computer tools and their applications? What are the prospects, present and future challenges of chemical engineering? And so on. It also provides the information new chemical engineering hires would need to excel and cross the critical novice engineer stage of their career. It is expected that this book will enhance students understanding and performance in the field and the development of the profession worldwide. Whether a new-hire engineer or a veteran in the field, this is a must—have volume for any chemical engineer’s library.

Integrating Theory and Research with Practice

A TEXTBOOK OF CHEMICAL ENGINEERING THERMODYNAMICS

Engineering Chemistry

ENGINEERING CHEMISTRY

Fundamentals and Applications

Designed for the course on Engineering Chemistry offered to first year undergraduate students of engineering, this book aims to strengthen fundamental concepts and highlight the applications of chemistry in the field of engineering. Written in a simple and lucid manner, this book covers a broad spectrum of topics including water technology, alternate energy resources, science of corrosion and green chemistry. It also includes a large number of end-of-chapter exercises, which test student understanding and are also a valuable resource from the examination point of view.

Basic Chemistry Calculations is intended to help students overcome the challenges associated with solving problems in chemistry. This book contains numerous solved problems in some important areas of chemistry. These worked examples will really improve students understanding in the aspect of calculations in chemistry. This book will be useful to students in high schools and higher institutions of learning. It will also be a useful guide for students of chemical engineering in order to improve their chemistry calculation skills which is required for proper understanding of chemical engineering calculations. The worked examples in this book are presented in a simple, logical and self-explanatory manner that will impart students with the required numerical skills for excelling in chemistry and chemical engineering calculations. Exercises are presented at the end of each topic in order for students to attempt and assess themselves. The topics covered in this book include: CALCULATIONS ON MOLE FRACTION AND MASS FRACTION, CALCULATIONS ON AVERAGE MOLECULAR MASS OF MIXED COMPOUNDS/MOLECULES, CALCULATIONS INVOLVING COMBUSTION, CALCULATIONS INVOLVING LIMITING REACTANT, CALCULATIONS INVOLVING THE FORMULA OF COMPOUND, EQUILIBRIUM REACTION CALCULATION. These topics are well simplified with the numerous worked examples explained in a step-by-step order under them. A thorough study of this textbook will definitely improve your calculation skills in chemistry.

Corrosion Chemistry details the scientific background of the corrosion process and contemporary applications for dealing with corrosion for engineers and scientists, covering the most recent breakthroughs and trends. Corrosion is in essence a chemical process, and it is crucial to understand the dynamics from a chemical perspective before proceeding with analyses, designs and solutions from an engineering aspect. This book can be used both as a textbook and a reference book both by academics and engineers and scientists in the field. As a reference for the engineer in the field, it is both a refresher for the veteran on the causes of corrosion and the methods, processes, and technologies to deal with it, over a variety of industries. It is the most up-to-date, comprehensive treatment of corrosion available, covering the most cutting-edge new processes and theories. For the freshman engineer just entering the field, it is a tremendous introduction to corrosion. As a textbook, it can be used for a single semester technical elective course in undergraduate and postgraduate education for disciplines such as chemistry, chemical engineering, petroleum engineering, civil engineering, material engineering, mechanical engineering, metallurgical engineering, mining engineering, agricultural engineering, and other related technical fields.

This textbook summarizes the fundamentals of mass balance relevant for chemical engineers and an easy and comprehensive manner. Plenty of example calculations, schemes and flow diagrams facilitate the understanding. Case studies from relevant topics such as sustainable chemistry illustrate the theory behind current applications.

Corrosion Chemistry

Basic of Engineering Chemistry (For RGPV, Bhopal)

Mass Balances for Chemical Engineers

An Applied Approach

Principles, Practice and Economics of Plant and Process Design

This textbook, Material Balance and Process Calculations, has been carefully written to teach you important topics in material balance and process calculations by explaining them with a mindset to fully equip you in the topics. Whether you want this book for general studies of these topics or you want this book to study for an exam, you will find it a very useful tool. This textbook is a mass balance teacher which is suitable for students in universities and students in colleges. It will also serve as a useful tool for direct entry students who are preparing for entrance examinations into colleges and universities. This book is not only for engineering students but also for chemistry students or any student who is offering a course in chemistry. The step by step explanations presented in the worked examples are easy to understand since care was taken to sufficiently explain salient points and process ideas. Efforts have been made to achieve a complete and simplified explanation of every example given in this textbook. Many worked examples have been included in each topic in order to fully cover every complexity the topic might contain. This book will boost your level of understanding of material balance and process calculations. Numerous exercises at the end of each chapter are intended to test students' understanding of the topic. Therefore students are thus presented with an effective means of self-assessment whereby they can determine their individual strengths and revision needs. The topics covered in this eBook include:

Some chapters in the book deal with the basic principles of chemistry while others are focused on its applied aspects, providing the correct interphase between the principles of chemistry and engineering. **KEY FEATURES**
* Chapters cover both basic principles of chemistry as also its applied aspects. * Written in easy self-explanatory language and in depth at the same time. * Review questions provided at the end of each chapter. * A separate section 'Laboratory Manual' in Engineering Chemistry comprising 12 experiments is appended at the end of the book.

Any good text book, particularly that in the fast changing fields such as engineering & technology, is not only expected to cater to the current curricular requirements of various institutions but also should provide a glimpse towards the latest developments in the concerned subject and the relevant disciplines. It should guide the periodic review and updating of the curriculum.

CHEMISTRY FOR ENGINEERING STUDENTS, connects chemistry to engineering, math, and physics; includes problems and applications specific to engineering; and offers realistic worked problems in every chapter that speak to your interests as a future engineer. Packed with built-in study tools, this textbook gives you the resources you need to master the material and succeed in the course. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Chemistry for Engineers

Textbook of Engineering Chemistry, 4th Edition

A Textbook

A TEXTBOOK OF ENGINEERING CHEMISTRY

Basic Chemistry Calculations: A Book for Chemistry and Chemical Engineering Students