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## KEY=CHEMISTRY - WILLIAMSON MARELI

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### ENGINEERING CHEMISTRY I (WBUT), 3RD EDITION

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*Vikas Publishing House Engineering Chemistry I has been primarily written for first year B.Tech students but can also be used by BSc and MSc students to clarify their fundamental knowledge. The book begins with the basic theories of chemistry in various disciplines in order to provide a necessary background for dealing with a number of different physicochemical phenomena. Key Features 1. Brief discussion of the concepts 2. Coverage of syllabus in totality 3. Examination-oriented approach 4. Large number of solved problems 5. Solution to previous year's question papers 6. Exercises at the end of each chapter*

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### FUNDAMENTALS OF MECHANICAL SCIENCES: ENGINEERING THERMODYNAMICS AND FLUID MECHANICS (FOR WBUT)

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PHI Learning Pvt. Ltd.

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### BASIC ENVIRONMENTAL ENGINEERING AND ELEMENTARY BIOLOGY (WBUT)

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*Vikas Publishing House The book 'Basic Environmental Engineering and Elementary Biology' has been written for the engineering students. It starts with basic concepts of ecology and concerns on environment. It then discusses how the spiraling rate of population growth and the requirements of human beings have led to large-scale deforestation, depletion of the ozone layer, creation of greenhouse effect, acid rain, smog and environmental pollution. The book equips students to manage environment-related issues by showing how technology can be used to control these problems. This well thought-out book on one of the most talked about issues today, can serve as a ground for future environmentalists. It can also be a highly useful reference work for those interested in working towards a better and cleaner environment. Fundamental aspects of environment principles have been explained in great detail, which can be used to manage environment and restore nature's balance.*

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### ENGINEERING CHEMISTRY (WBUT)

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### ENGINEERING MATHEMATICS II (WBUT), 2ND EDITION

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*Vikas Publishing House Engineers face mathematical dilemmas every day—be it simple arithmetic or complex differential equations. To bail out engineers in such situations, a thorough understanding of applied mathematical concepts is quintessential. Engineering Mathematics II comes up with this and more—from discussing graph theory to solving improper integrals; from working out linear differential equations to understanding the Laplace transforms, the book is an exhaustive cache of solved numerical examples to enhance learning and problem-solving skills in students. The book, with its simple calculations and derivations, completely meets the requirements of II semester BE/BTech students who aspire to master mathematics. Keeping the curriculum at focus, the authors offer numerous problem sets and model question papers, which serve as a great reference work for course study as well as for getting a real-life experience of competitive exams With this book as guide, students will find tackling complex concepts and problems an easy task. It is a great all-time companion for budding engineers. Key Features 1. Lucid, well-explained concepts with solved examples 2. Numerical problem sets for self-assessment 3. Large number of MCQs and model test papers 4. Past examination papers with answers*

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### ELECTRICAL ENGINEERING 101

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### EVERYTHING YOU SHOULD HAVE LEARNED IN SCHOOL...BUT PROBABLY DIDN'T

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*Elsevier Electrical Engineering 101 covers the basic theory and practice of electronics, starting by answering the question "What is electricity?" It goes on to explain the fundamental principles and components, relating them constantly to real-world examples. Sections on tools and troubleshooting give engineers deeper understanding and the know-how to create and maintain their own electronic design projects. Unlike other books that simply describe electronics and provide step-by-step build instructions, EE101 delves into how and why electricity and electronics work, giving the reader the tools to take their electronics education to the next level. It is written in a down-to-earth style and explains jargon, technical terms and schematics as they arise. The author builds a genuine understanding of the fundamentals and shows how they can be applied to a range of engineering problems. This third edition includes more real-world examples and a glossary of formulae. It contains new coverage of: Microcontrollers FPGAs Classes of components Memory (RAM, ROM, etc.) Surface mount High speed design Board layout Advanced digital electronics (e.g. processors) Transistor circuits and circuit design Op-amp and logic circuits Use of test equipment Gives readers a simple explanation of complex concepts, in terms they can understand and relate to everyday life. Updated content throughout and new material on the latest technological advances. Provides readers with an invaluable set of tools and references that they can use in their everyday work.*

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### ENGINEERING CHEMISTRY

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*L. K. International Pvt Ltd 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.*

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### ENGINEERING CHEMISTRY

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*Market\_Desc: Primary Market· RGPV (B.E.- 101 Engineering Chemistry)· VTU (10CHE12/ 10CHE 22 Engineering Chemistry)· BPUT ( BSCC 2101 Chemistry)· UPTU (EAS-102/202 Engineering Chemistry)· WBUT (Chemistry -I (Gr A and B))· JNTU (BS Engineering Chemistry)· Anna (CY2111 Engineering Chemistry-I; CY2161 Engineering Chemistry-II)· PTU ( CH-101 Engineering Chemistry)· RTU ([106] and [206] Engineering Chemistry-I and II)· GTU ( Chemistry)· CSVTU ( 300112 Applied Chemistry)Secondary Market· Higher semesters of Chemical and Biotechnology courses.· Students preparing for GATE and TANCET examinations. Special Features: · Accordant with the syllabi of various technical universities.· Structured to support the objective of Engineering Chemistry course for undergraduates.· Excellent correlation of concepts with their applications.· Systematic chapter organization based on logical progression of concepts.ü Builds the fundamentals of the subject in the initial chaptersü Comprehensively covers the applied topics in the field of engineering in the later chapters.ü Coherent chapter layout withü Clearly defined learning objectives.ü Introduction of topics, their precise and adequate explanation.ü Ample illustrations and diagrams.ü Solved examples at the end of relevant subtopics to strengthen the concepts.· Multiple-author model with content sourced from experts in respective areas of expertise (Inorganic, Organic, Physical, Analytical and Applied Chemistry) across geographies.· Comprehensive question bank at the end of each chapter containingü Objective type questions (classified into multiple-choice questions and fill in the blanks).ü Review questions (categorized into short-answer and long-answer type questions).ü Numerical problems.· Extensively reviewed content with single or multiple reviews by academicians of various technical universities for each chapter to generate error-free and accurate content. About The Book: The Engineering Chemistry course for undergraduate students is designed to strengthen the fundamentals of chemistry and then build an interface of theoretical concepts with their industrial/engineering applications. This book is structured keeping in view the objective of the course and is intended as a textbook for first year B.Tech/B.E. students of all engineering disciplines. The book aims to impart in-depth knowledge of the subject and highlight the role of chemistry in the field of engineering. The lucid explanation of the topics will help students understand the fundamental concepts and apply them to design engineering materials and solve problems related to them. An attempt has been made to logically correlate the topic with its application.*

The extension of fundamentals of electrochemistry to energy storage devices such as commercial batteries and fuel cells is one such example. The layout for a topic is designed after detailed study and analysis of the syllabi of various technical universities. The chapter for each topic begins with clearly defined learning objectives, followed by introduction of subtopics, their precise and adequate explanation supported with ample illustrations and diagrams. Solved examples are given at the end of relevant subtopics to strengthen the concepts. The chapters conclude with a set of review and practice questions.

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## **BIOCHEMICAL ENGINEERING**

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### **A TEXTBOOK FOR ENGINEERS, CHEMISTS AND BIOLOGISTS**

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**John Wiley & Sons** 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.

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### **A TEXTBOOK OF ENGINEERING CHEMISTRY**

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**S. Chand Publishing** 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.

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### **PRINCIPLES OF MASS TRANSFER AND SEPERATION PROCESSES**

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**PHI Learning Pvt. Ltd.** 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.

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### **AN INTRODUCTION TO THERMAL POWER PLANT ENGINEERING AND OPERATION**

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#### **FOR POWER PLANT PROFESSIONALS**

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**Notion Press** This book is intended to meet the requirements of the fresh engineers on the field to endow them with indispensable information, technical know-how to work in the power plant industries and its associated plants. The book provides a thorough understanding and the operating principles to solve the elementary and the difficult problems faced by the modern young engineers while working in the industries. This book is written on the basis of 'hands-on' experience, sound and in-depth knowledge gained by the authors during their experiences faced while working in this field. The problem generally occurs in the power plants during operation and maintenance. It has been explained in a lucid language.

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### **DIGITAL CONTROL ENGINEERING**

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#### **ANALYSIS AND DESIGN**

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**Academic Press** Digital controllers are part of nearly all modern personal, industrial, and transportation systems. Every senior or graduate student of electrical, chemical or mechanical engineering should therefore be familiar with the basic theory of digital controllers. This new text covers the fundamental principles and applications of digital control engineering, with emphasis on engineering design. Fadali and Visioli cover analysis and design of digitally controlled systems and describe applications of digital controls in a wide range of fields. With worked examples and Matlab applications in every chapter and many end-of-chapter assignments, this text provides both theory and practice for those coming to digital control engineering for the first time, whether as a student or practicing engineer. **Extensive Use of computational tools:** Matlab sections at end of each chapter show how to implement concepts from the chapter. Frees the student from the drudgery of mundane calculations and allows him to consider more subtle aspects of control system analysis and design. **An engineering approach to digital controls:** emphasis throughout the book is on design of control systems. **Mathematics is used to help explain concepts, but throughout the text discussion is tied to design and implementation.** For example coverage of analog controls in chapter 5 is not simply a review, but is used to show how analog control systems map to digital control systems. **Review of Background Material:** contains review material to aid understanding of digital control analysis and design. Examples include discussion of discrete-time systems in time domain and frequency domain (reviewed from linear systems course) and root locus design in s-domain and z-domain (reviewed from feedback control course). **Inclusion of Advanced Topics** In addition to the basic topics required for a one semester senior/graduate class, the text includes some advanced material to make it suitable for an introductory graduate level class or for two quarters at the senior/graduate level. Examples of optional topics are state-space methods, which may receive brief coverage in a one semester course, and nonlinear discrete-time systems. **Minimal Mathematics Prerequisites** The mathematics background required for understanding most of the book is based on what can be reasonably expected from the average electrical, chemical or mechanical engineering senior. This background includes three semesters of calculus, differential equations and basic linear algebra. Some texts on digital control require more

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### **BASIC ELECTRICAL AND ELECTRONICS ENGINEERING:**

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**Pearson Education India** Basic Electrical and Electronics Engineering provides an overview of the basics of electrical and electronic engineering that are required at the undergraduate level. The book allows students outside electrical and electronics engineering to easily

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### **ENGINEERING PHYSICS PRACTICAL**

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Krishna Prakashan Media

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### **CHEMISTRY-I (AS PER AICTE)**

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**Vikas Publishing House** The book has been designed according to the new AICTE syllabus and will cater to the needs of engineering students across all branches. The book provides the basis which is necessary for dealing with different types of physicochemical phenomena. Great care has been taken to explain the physical meaning of mathematical formulae, when and where they are required, followed by lucid development and discussion of experimental behaviour of systems. Every chapter has a set of solved problems and exercises. The idea is to instil sound understanding of the fundamental principles and applications of the subject. The author is known for explaining the concepts of Engineering Chemistry with full clarity, leaving no ambiguity in the minds of the readers. Although this book is primarily intended for BTech/BE students, it will also cater to the requirements of those pursuing BSc and MSc, including those of other disciplines like materials science and environmental science.

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## MATHEMATICS FOR BCA VOLUME 2 - (WBUT)

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Vikas Publishing House Mathematics for BCA is specially designed for students of BCA, who are at the threshold of a completely new domain. Keeping this in mind, the book has been planned with utmost care in the exposition of concepts, choice of illustrative examples, and also in sequencing of topics. The language is simple yet precise. A large number of worked out problems have been included to familiarize the students with the techniques to solving them, and to instill confidence. The topics are interdependent and must be studied in the same order as given in the book.

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## FUNCTIONAL BIOMATERIALS

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### DRUG DELIVERY AND BIOMEDICAL APPLICATIONS

Springer This book explores in depth a wide range of functional biomaterials-based systems for drug, gene delivery, and biomedical aspects. The chapters cover newer technologies such as polymeric micelle, pH-responsive biomaterials, stimuli-responsive hydrogels, silk fibroin, inorganic biomaterials, synthetic biomaterials, 3D printed biomaterials, metallic biomaterials, ceramic and hybrid biomaterials. It also describes the theranostic approaches for cancer therapy, the biomaterials-based nanofibers scaffolds in tissue engineering, as well as the strategies applications of metallic biomaterials for the medical and dental prosthetic field. This newer and updated approach will be attractive for biomedical engineering students working on materials science in the development of novel drug delivery strategies. The book will be an important reference for researchers and professionals working on biomaterial research in the pharmaceutical and medical fields.

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## ELECTRICAL CIRCUIT THEORY AND TECHNOLOGY

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Routledge Electrical Circuit Theory and Technology is a fully comprehensive text for courses in electrical and electronic principles, circuit theory and electrical technology. The coverage takes students from the fundamentals of the subject, to the completion of a first year degree level course. Thus, this book is ideal for students studying engineering for the first time, and is also suitable for pre-degree vocational courses, especially where progression to higher levels of study is likely. John Bird's approach, based on 700 worked examples supported by over 1000 problems (including answers), is ideal for students of a wide range of abilities, and can be worked through at the student's own pace. Theory is kept to a minimum, placing a firm emphasis on problem-solving skills, and making this a thoroughly practical introduction to these core subjects in the electrical and electronic engineering curriculum. This revised edition includes new material on transients and laplace transforms, with the content carefully matched to typical undergraduate modules. Free Tutor Support Material including full worked solutions to the assessment papers featured in the book will be available at <http://textbooks.elsevier.com/>. Material is only available to lecturers who have adopted the text as an essential purchase. In order to obtain your password to access the material please follow the guidelines in the book.

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## BASIC ENGINEERING MATHEMATICS

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Routledge Now in its seventh edition, Basic Engineering Mathematics is an established textbook that has helped thousands of students to succeed in their exams. Mathematical theories are explained in a straightforward manner, being supported by practical engineering examples and applications in order to ensure that readers can relate theory to practice. The extensive and thorough topic coverage makes this an ideal text for introductory level engineering courses. This title is supported by a companion website with resources for both students and lecturers, including lists of essential formulae, multiple choice tests, and full solutions for all 1,600 further questions.

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## CHEMICAL REACTION ENGINEERING II

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Nirali Prakashan

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## A TEXTBOOK OF ENVIRONMENTAL CHEMISTRY AND POLLUTION CONTROL

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S. Chand Publishing The Progress and Prosperity of any country mainly depend upon the quality of its human resource, which in turn, depends upon the quality of its educational system. Higher and technical education, being at the apex of the pyramid of education, play a major role in the overall development of any country. One of the major drawbacks of the higher and technical education in our country, is the palpable gap between the world of learning and the world of work.

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## CONTROL ENGINEERING

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Market\_Desc: Primary Market: VTU: 06ME71 Control Engineering 7th Sem/ EC/TC/EE/IT/BM/ML 06ES43 4th Sem· JNTU: ECE/EEE Control Systems 4th Sem· Anna: ECE/EEE PTEC 9254/PTEE 9201 Control Systems 3rd Sem· UPTU (ME)EEE-409 Electrical Machines & Automatic Control 4th Sem/ ECE/ETE/EEE EEC503/EEE502 Control Systems 5th Sem· Mumbai: ETE Principles of Control System 5th Sem· BPUT ETE/EEE/ECE CPEE 5302 Control System Engineering 6th Sem· WBUT EE-503 Control System 5th Sem; EC-513 Control System 5th Sem· RGPV EC-402 Control Systems, 4th Sem· PTU ECE/EIE/EEE IC-204 Linear Control System 4th Sem· GNDU ECE ECT-223 Linear Control System 4th Sem  
Secondary Market: BPUT:CPME 6403 Mechanical Measurement and Control, 7th sem· RGPV: ME 8302 Mechatronics, 8th Sem elective· Anna: PTME9035 measurement and controls, 8th Sem· UPTU: TME-028 Automatic Controls, Elective 8th Sem· Mumbai: Mechatronics, 6th Sem· WBUT: ME 602 Mechatronics and Modern Control, 6th Sem  
Special Features: § The book provides clear exposure to the principles of control system design and analysis techniques using frequency and time domain analysis. § Explains the important topics of PID controllers and tuning procedures. § Includes state space methods for analysis of control system. § Presents necessary mathematical topics such as Laplace transforms at relevant places. § Contains detailed artwork capturing circuit diagrams, signal flow graphs, block diagrams and other important topics. § Presents stability analysis using Bode plots, Nyquist diagrams and Root locus techniques. § Each chapter contains a wide variety of solved problems with stepwise solutions. § Appendices present the use of MATLAB programs for control system design and analysis, and basic operations of matrices. § Model question papers contain questions from various university question papers at the end of the book. § Excellent pedagogy includes 520+ Figures and tables 200+ Solved problems 90+ Objective questions 100+ Review questions 70+ Numerical problems  
About The Book: Control Engineering is the field in which control theory is applied to design systems to produce desirable outputs. It essays the role of an incubator of emerging technologies. It has very broad applications ranging from automobiles, aircrafts to home appliances, process plants, etc. This subject gains importance due to its multidisciplinary nature, and thus establishes itself as a core course among all engineering curricula. This textbook aims to develop knowledge and understanding of the principles of physical control system modeling, system design and analysis. Though the treatment of the subject is from a mechanical engineering point of view, this book covers the syllabus prescribed by various universities in India for aerospace, automobile, industrial, chemical, electrical and electronics engineering disciplines at undergraduate level.

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## CHEMISTRY FOR ENGINEERS

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Laxmi Publications

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## MANUFACTURING PROCESS

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New Age International Effective from 2008-09 session, U.P.T.U. has introduced the subject of manufacturing processes for first year engineering students of all streams. This textbook covers the entire course material in a distilled form.

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## INTRODUCTION TO PROCESS CALCULATIONS STOICHIOMETRY

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Nirali Prakashan

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## WIDE BANDGAP SEMICONDUCTOR SPINTRONICS

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CRC Press This book is focused on the spintronic properties of III-V nitride semiconductors. Particular attention is paid to the comparison between zinc blende GaAs- and wurtzite GaN-based structures, where the Rashba spin-orbit interaction plays a crucial role in voltage-controlled spin engineering. The book also deals with topological insulators, a new class of materials that could deliver sizable Rashba spin splitting in the surface electron spectrum. Electrically driven zero-magnetic-field spin splitting of surface electrons is discussed with respect to the specifics of electron-localized spin interaction and voltage-controlled ferromagnetism. The book covers generic topics in spintronics without entering into device specifics, since the overall goal of the enterprise is to provide theoretical background for most common concepts of spin-electron physics and give instructions to be used in solving problems of



a general and specific nature. The book is intended for graduate students and may serve as an introductory course in this specific field of solid-state theory and applications.

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### PROCESS CALCULATIONS

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PHI Learning Pvt. Ltd.

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### BASIC ENVIRONMENTAL ENGINEERING [ELECTRONIC RESOURCE]

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About the Book: This textbook provides the basic information about the Environmental Engineering and as such, very much useful for the first year B. Tech. students of all branches/disciplines. The book covers the new syllabus of the semester scheme for the first year in R.T.U. and other universities. It encompasses the practical applications of the subject, that is the real need of the hour and also discusses the major environmental problems we face today. Key features Contains authentic information provided by the different Manuals prepared by The C.P.H.E.E.O. Includes examples of diffe.

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### GROUP THEORY AND ITS APPLICATIONS IN CHEMISTRY, SECOND EDITION

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PHI Learning Pvt. Ltd. This book, divided into two parts, now in its second edition, presents the basic principles of group theory and their applications in chemical theories. While retaining the thorough coverage of the previous edition, the book in Part I, discusses the symmetry elements, point groups and construction of character tables for different point groups. In Part II, it describes the concept of hybridization to explain the shapes of molecules and analyzes the character tables to predict infrared and Raman active vibrational modes of molecules. It also brings into fore the molecular orbital theory and the techniques of group theory to interpret bonding in transition metal complexes and their electronic spectra. Finally, the book describes the crystal symmetry in detail as well as the Woodward-Hoffmann rules to determine the pathways of electrocyclic and cycloaddition reactions. NEW TO THE SECOND EDITION • New sections on Direct Product, Group-sub-group Relationships, Effect of Descent in Octahedral Symmetry on Degeneracy, Jahn-Teller Distortion, Group-sub-group Relationships and Electronic Spectra of Complexes and Influence of Coordination on the Infrared Spectra of Oxoanionic Ligands, Space Groups • Revised sections on Projection Operator, SALC Molecular Orbitals of Benzene and  $\pi$ -Molecular Orbitals of 1, 3-Butadiene KEY FEATURES • Provides mathematical foundations to understand group theory. • Includes several examples to illustrate applications of group theory. • Presents chapter-end exercises to help the students check their understanding of the subject matter. The book is designed for the senior undergraduate students and postgraduate students of Chemistry. It will also be of immense use to the researchers in the fields where group theory is applied.

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### INORGANIC CHEMISTRY

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PHI Learning Pvt. Ltd.

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### ENGINEERING MATHEMATICS - II

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New Age International About the Book: This book Engineering Mathematics-II is designed as a self-contained, comprehensive classroom text for the second semester B.E. Classes of Visveswaraiah Technological University as per the Revised new Syllabus. The topics included are Differential Calculus, Integral Calculus and Vector Integration, Differential Equations and Laplace Transforms. The book is written in a simple way and is accompanied with explanatory figures. All this make the students enjoy the subject while they learn. Inclusion of selected exercises and problems make the book educational in nature. It shou.

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### UNIT OPERATIONS-I FLUID FLOW AND MECHANICAL OPERATIONS

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Nirali Prakashan

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### HOUSING FOR ALL

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KHANNA PUBLISHING HOUSE This book titled "Housing for All: Design, Construction and Management" by A.K. Jain is a comprehensive assessment of the housing situation in India which not only traces the path taken by (governments so far but also outlines a roadmap for the future. The book begins with an overview of the housing scenario in India. It discusses various housing programmes and draws a distinction between affordable housing and adequate housing. The book also draws particular attention to housing issues of special groups such as the elderly, disabled, homeless, migrant and transit workers, students and singlewomen. There is also a discussion on the issue of social and physical infrastructure. The book notes that housing units alone do not constitute housing but infrastructure plays a critical role in the occupancy of housing. The question of reducing the cost of housing has been vexatious for long. Jain deals with this issue in detail and suggests various low-cost technologies and house building systems for making housing more affordable. Another issue is that of rental housing. Jain suggests that giving a boost to rental housing through a slew of measures can go a long way in making housing more accessible and bring vacant housing into the market.

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### HEAT TRANSFER HANDBOOK

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John Wiley & Sons Chapters contributed by thirty world-renown experts. \* Covers all aspects of heat transfer, including micro-scale and heat transfer in electronic equipment. \* An associated Web site offers computer formulations on thermophysical properties that provide the most up-to-date values.

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### MATERIALS SCIENCE AND ENGINEERING

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#### A FIRST COURSE

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PHI Learning Pvt. Ltd. This well-established and widely adopted book, now in its Sixth Edition, provides a thorough analysis of the subject in an easy-to-read style. It analyzes, systematically and logically, the basic concepts and their applications to enable the students to comprehend the subject with ease. The book begins with a clear exposition of the background topics in chemical equilibrium, kinetics, atomic structure and chemical bonding. Then follows a detailed discussion on the structure of solids, crystal imperfections, phase diagrams, solid-state diffusion and phase transformations. This provides a deep insight into the structural control necessary for optimizing the various properties of materials. The mechanical properties covered include elastic, anelastic and viscoelastic behaviour, plastic deformation, creep and fracture phenomena. The next four chapters are devoted to a detailed description of electrical conduction, superconductivity, semiconductors, and magnetic and dielectric properties. The final chapter on 'Nanomaterials' is an important addition to the sixth edition. It describes the state-of-art developments in this new field. This eminently readable and student-friendly text not only provides a masterly analysis of all the relevant topics, but also makes them comprehensible to the students through the skillful use of well-drawn diagrams, illustrative tables, worked-out examples, and in many other ways. The book is primarily intended for undergraduate students of all branches of engineering (B.E./B.Tech.) and postgraduate students of Physics, Chemistry and Materials Science. KEY FEATURES • All relevant units and constants listed at the beginning of each chapter • A note on SI units and a full table of conversion factors at the beginning • A new chapter on 'Nanomaterials' describing the state-of-art information • Examples with solutions and problems with answers • About 350 multiple choice questions with answers

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### ENGINEERING CHEMISTRY

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Infinity Science Press Llc 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.

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### CHEMICAL PROCESS PRINCIPLES CHARTS

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**ENGINEERING ECONOMY**

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*McGraw-Hill College This student-friendly text on the current economic issues particular to engineering covers the topics needed to analyze engineering alternatives. Students use both hand-worked and spreadsheet solutions of examples, problems and case studies. In this edition the options have been increased with an expanded spreadsheet analysis component, twice the number of case studies, and virtually all new end-of-chapter problems. The chapters on factor derivation and usage, cost estimation, replacement studies, and after-tax evaluation have been heavily revised. New material is included on public sector projects and cost estimation. A reordering of chapters puts the fundamental topics up front in the text. Many chapters include a special set of problems that prepare the students for the Fundamentals of Engineering (FE) exam. This text provides students and practicing professionals with a solid preparation in the financial understanding of engineering problems and projects, as well as the techniques needed for evaluating and making sound economic decisions. Distinguishing characteristics include learning objectives for each chapter, an easy-to-read writing style, many solved examples, integrated spreadsheets, and case studies throughout the text. Graphical cross-referencing between topics and quick-solve spreadsheet solutions are indicated in the margin throughout the text. While the chapters are progressive, over three-quarters can stand alone, allowing instructors flexibility for meeting course needs. A complete online learning center (OLC) offers supplemental practice problems, spreadsheet exercises, and review questions for the the Fundamentals of Engineering (FE) exam.*

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**FUNDAMENTALS OF POLYMER SCIENCE AND ENGINEERING**

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