

Atul Prakashan Mechanical Engineering

This textbook fosters information exchange and discussion on all aspects of introductory matters of modern mechanical engineering from a number of perspectives including: mechanical engineering as a profession, materials and manufacturing processes, machining and machine tools, tribology and surface engineering, solid mechanics, applied and computational mechanics, mechanical design, mechatronics and robotics, fluid mechanics and heat transfer, renewable energies, biomechanics, nanoengineering and nanomechanics. At the end of each chapter, a list of 10 questions (and answers) is provided.

Taking a big-picture approach, *Piping and Pipeline Engineering: Design, Construction, Maintenance, Integrity, and Repair* elucidates the fundamental steps to any successful piping and pipeline engineering project, whether it is routine maintenance or a new multi-million dollar project. The author explores the qualitative details, calculations, and t

A rigorous and thorough analysis of the production of air pollutants and their control, this text is geared toward chemical and environmental engineering students. Topics include combustion, principles of aerosol behavior, theories of the removal of particulate and gaseous pollutants from effluent streams, and air

pollution control strategies. 1988 edition. Reprint of the Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1988 edition.

The Mechanical Engineer's Handbook was developed and written specifically to fill a need for mechanical engineers and mechanical engineering students throughout the world. With over 1000 pages, 550 illustrations, and 26 tables the Mechanical Engineer's Handbook is very comprehensive, yet affordable, compact, and durable. The Handbook covers all major areas of mechanical engineering with succinct coverage of the definitions, formulas, examples, theory, proofs, and explanations of all principle subject areas. The Handbook is an essential, practical companion for all mechanical engineering students with core coverage of nearly all relevant courses included. Also, anyone preparing for the engineering licensing examinations will find this handbook to be an invaluable aid. Useful analytical techniques provide the student and practicing engineer with powerful tools for mechanical design. This book is designed to be a portable reference with a depth of coverage not found in "pocketbooks" of formulas and definitions and without the verbosity, high price, and excessive size of the huge encyclopedic handbooks. If an engineer needs a quick reference for a wide array of information, yet does not have a full library of textbooks or does not want to spend the extra time and effort necessary to search and carry a six pound

handbook, this book is for them. * Covers all major areas of mechanical engineering with succinct coverage of the definitions, formulae, examples, theory, proofs and explanations of all principle subject areas * Boasts over 1000 pages, 550 illustrations, and 26 tables * Is comprehensive, yet affordable, compact, and durable with strong 'flexible' binding * Possesses a true handbook 'feel' in size and design with a full colour cover, thumb index, cross-references and useful printed endpapers

This comprehensive introduction to basic manufacturing processes is ideal for both degree and diploma courses in engineering. With several pedagogical features, the text makes the topics understandable and appealing for students. The book first introduces the concepts of engineering materials and their properties, measurement and quality in manufacturing and allied activities before dwelling upon the details of different manufacturing processes such as machining, casting, metal forming, powder metallurgy and joining. To keep pace with the latest advancements in technology, use of non-conventional resources, applications of computers, and use of robots in manufacturing are also discussed in considerable detail. The text also provides a thorough treatment of topics on economy and management of production.

Mechanical engineering, as its name suggests, deals with the mechanics of operation of

mechanical systems. This is the branch of engineering which includes design, manufacturing, analysis and maintenance of mechanical systems. It combines engineering physics and mathematics principles with material science to design, analyse, manufacture and maintain mechanical systems. This book covers the field requires an understanding of core areas including thermodynamics, material science, manufacturing, energy conversion systems, power transmission systems and mechanisms. My hope is that this book, through its careful explanations of concepts, practical examples and figures bridges the gap between knowledge and proper application of that knowledge.

Praise for the first edition: "This excellent text will be useful to every system engineer (SE) regardless of the domain. It covers ALL relevant SE material and does so in a very clear, methodical fashion. The breadth and depth of the author's presentation of SE principles and practices is outstanding." –Philip Allen This textbook presents a comprehensive, step-by-step guide to System Engineering analysis, design, and development via an integrated set of concepts, principles, practices, and methodologies. The methods presented in this text apply to any type of human system -- small, medium, and large organizational systems and system development projects delivering engineered systems or services across multiple business sectors such as medical, transportation, financial, educational, governmental, aerospace and defense, utilities, political, and charity, among others. Provides a common focal point for "bridging the gap" between and unifying System Users, System Acquirers, multi-discipline System Engineering, and Project, Functional, and Executive Management education, knowledge, and decision-making for developing systems, products, or services Each chapter provides definitions of key terms, guiding principles, examples, author's notes, real-

world examples, and exercises, which highlight and reinforce key SE&D concepts and practices. Addresses concepts employed in Model-Based Systems Engineering (MBSE), Model-Driven Design (MDD), Unified Modeling Language (UML/TM) / Systems Modeling Language (SysML/TM), and Agile/Spiral/V-Model Development such as user needs, stories, and use cases analysis; specification development; system architecture development; User-Centric System Design (UCSD); interface definition & control; system integration & test; and Verification & Validation (V&V). Highlights/introduces a new 21st Century Systems Engineering & Development (SE&D) paradigm that is easy to understand and implement. Provides practices that are critical staging points for technical decision making such as Technical Strategy Development; Life Cycle requirements; Phases, Modes, & States; SE Process; Requirements Derivation; System Architecture Development, User-Centric System Design (UCSD); Engineering Standards, Coordinate Systems, and Conventions; et al. Thoroughly illustrated, with end-of-chapter exercises and numerous case studies and examples, Systems Engineering Analysis, Design, and Development, Second Edition is a primary textbook for multi-discipline, engineering, system analysis, and project management undergraduate/graduate level students and a valuable reference for professionals.

This book provides a review of problems during design and construction on problematic soils. Design methods, site investigation, construction and analysis of the various improvement methods available are explained and discussed. Various regions may have different soils with geotechnical problems that differ from those faced in other regions. For example, in Southeast Asia, the common geotechnical problems are those associated with construction on soft clays and organic soils, while in the arid region of the Middle East, problems are generally

associated with the desert soils. In the US, the problems are associated with organic soils, expansive and collapsing soils, and shale. Laterite and lateritic soils are especially problematic in Mexico. Similarly, in Europe, for example, the geotechnical problems are associated with loess (France), and organic soil (Germany). A detailed description of various methods of ground improvement has been provided in 11 chapters. Each chapter deals not only with a description of the method but also focuses on region-specific ground problems and suitable ground improvement techniques. Case studies have also been included. One general chapter is dedicated to site investigation, instrumentation, assessment and control. This book will be of value to students and professionals in the fields of civil and geotechnical engineering, as well as to soil scientists and engineering geologists.

Piping and Pipeline Engineering Design, Construction, Maintenance, Integrity, and Repair
CRC Press

The second edition of Automobile Mechanical and Electrical Systems concentrates on core technologies to provide the essential information required to understand how different vehicle systems work. It gives a complete overview of the components and workings of a vehicle from the engine through to the chassis and electronics. It also explains the necessary tools and equipment needed in effective car maintenance and repair, and relevant safety procedures are included throughout. Designed to make learning easier, this book contains: Photographs, flow charts and quick reference tables Detailed diagrams and clear descriptions that simplify the more complicated topics and aid revision Useful features throughout, including definitions, key facts and 'safety first' considerations. In full colour and with support materials from the author's website (www.automotive-technology.org), this is the guide no student enrolled on an

automotive maintenance and repair course should be without.

S. Chand's Physics, designed to serve as a textbook for students pursuing their engineering degree course, B.E. in Gujarat Technical University. The book is written with the singular objective of providing the students of GTU with a distinct source material as per the syllabus. The philosophy of presentation of the material in the book is based upon decades of classroom interaction of the authors. In each chapter, the fundamental concepts pertinent to the topic are highlighted and the in-between continuity is emphasized. Throughout the book attention is given to the proper presentation of concepts and practical applications are cited to highlight the engineering aspects. A number of problems are solved. New problems are included in order to expedite the learning process of students of all hues and to improve their academic performance. The fundamental concepts are emphasized in each chapter and the details are developed in an easy-to-follow style. Each chapter is divided into smaller parts and sub-headings are provided to make the reading a pleasant journey from one interesting topic to another important topic.

Introduction to Process Engineering and Design covers basic principles to design alternate systems, develop process diagrams and select the best alternative to be adopted. Multiple industrial examples provided in the book will enhance the skills of the readers for innovative designs. Salient Features:

- Focuses on process design of chemical plants and equipment
- State-of-the-art technique of supercritical extraction, reactive distillation, short path distillation discussed
- Process Flow-charts are provided throughout the book

During the 19th century, the engineering of ports and harbours became a large and specialised branch of the profession. This development began in ports in physically difficult locations and

may be particularly identified with the growth of the Port of Liverpool. Stimulated by the arrival of ever-larger steamships and the heavy investment in port facilities that they demanded, it spread around much of the world. The opening papers give examples of what could be achieved in antiquity; the following ones set out the advances in design and technology from 1700 to the start of this century - and note some of the failures and recurrent problems. They also illustrate the critical importance of political and economic factors in determining what the engineers achieved.

Designed as a textbook for undergraduate students in various engineering disciplines—Mechanical, Civil, Industrial Engineering, Electronics Engineering and Computer Science—and for postgraduate students in Industrial Engineering and Water Resource Management, this comprehensive and well-organized book, now in its Second Edition, shows how complex economic decisions can be made from a number of given alternatives. It provides the managers not only a sound basis but also a clear-cut approach to making decisions. These decisions will ultimately result in minimizing costs and/or maximizing benefits. What is more, the book adequately illustrates the concepts with numerical problems and Indian cases. While retaining all the chapters of the previous edition, the book adds a number of topics to make it more comprehensive and more student friendly. What's New to This Edition

- Discusses different types of costs such as average cost, recurring cost, and life cycle cost.
- Deals with different types of cost estimating models, index numbers and capital allowance.
- Covers the basics of nondeterministic decision making.
- Describes the meaning of cash flows with probability distributions and decision making, and selection of alternatives using simulation.
- Discusses the basic concepts of Accounting.

This book, which is profusely illustrated with

worked-out examples and a number of diagrams and tables, should prove extremely useful not only as a text but also as a reference for those offering courses in such areas as Project Management, Production Management, and Financial Management.

ACE THE GMAT is based on a simple but powerful observation: Test-takers who score high on the GMAT exam do so primarily by understanding how to solve a finite number of the most important, recurring problems that appear on the GMAT. What are these important, recurring problems? The answer to this question is the basis of this book. This manual provides in-depth analysis of over 200 all-star problems that are key to mastering the seven major GMAT problem types including Problem Solving, Data Sufficiency, Sentence Correction, Critical Reasoning, Reading Comprehension, Analytical Writing, and Integrated Reasoning. Apart from providing readers with answers and full explanations, a special feature of this book is that each problem is categorized by type (“classification”), rated by difficulty level (“chili rating”), and supplemented with a problem-solving strategy (“snapshot”). “Chance favors the prepared mind.” Whether you’re a candidate already enrolled in a test-prep course or are undertaking self-study, this guidebook will serve as a rigorous skill-building study guide to help you conquer the math, verbal, analytical writing, and integrated reasoning sections of the exam. Studying for the math and verbal sections of the GMAT exam requires some 100 hours of study time. This book’s content is conveniently divided into topics, which require two to three hours of study time per day. Total study time will vary between 80 to 120 hours for the entire 40 days. Solving (Official exam instructions for Problem Solving, Strategies and approaches, Review of basic math, Multiple-choice problems, Answers and explanations); Chapter 3 – Data Sufficiency (Official exam instructions for Data Sufficiency, Strategies and approaches, How are answers

chosen in Data Sufficiency? How do the big seven numbers work? Multiple-choice problems, Answers and explanations); Chapter 4 – Sentence Correction (Official exam instructions for Sentence Correction, Strategies and approaches, Review of Sentence Correction, Multiple-choice problems, Answers and explanations); Chapter 5 – Critical Reasoning (Official exam instructions for Critical Reasoning, Strategies and approaches, Review of Critical Reasoning, Multiple-choice problems, Answers and explanations); Chapter 6 – Reading Comprehension (Official exam instructions for Reading Comprehension, Strategies and approaches, Review of Reading Comprehension, Answers and explanations); Chapter 7 – Analytical Writing Workshop (Official exam instructions for the Analytical Writing Assessment, Strategies and approaches, Review of Analytical Writing, Essay exercises, Outlines and proposed solutions); Chapter 8 – Integrated Reasoning Workshop (Official exam instructions for Integrated Reasoning, Strategies and approaches; Review of Integrated Reasoning with exercises, Answers and explanations); Appendix I – GMAT and MBA Informational Websites (Registering for the GMAT exam; MBA fairs & forums; MBA social networks; GMAT courses; Other GMAT & MBA websites; Information on business school rankings); Appendix II – Contact Information for the World’s Leading Business Schools (U.S. business schools; Canadian business schools; European business schools; Australian business schools; Asia-Pacific business schools; Latin and South American business schools; South African business schools); Quiz – Answers; On a Personal Note; Praise for Ace the GMAT. “Finally, a book that helps you master those learning skills that are critical to success on the GMAT.” —Linda B. Meehan, former Assistant Dean & Executive Director of Admissions, Columbia Business School

Modern computer simulations make stress analysis easy. As they continue to

replace classical mathematical methods of analysis, these software programs require users to have a solid understanding of the fundamental principles on which they are based. Develop Intuitive Ability to Identify and Avoid Physically Meaningless Predictions Applied Mechanics o

The book is designed to help the first year engineering students in building their concepts in the course on Programming for Problem Solving. It introduces the subject in a simple and lucid manner for a better understanding. It adopts a student friendly approach to the subject matter with many solved examples and unsolved questions, illustrations and well-structured C programs.

This book focuses on Process Engineering and Design of Chemical Plant and Equipment. It delves into the evaluation of options for design including innovation, cost-effectiveness, safety etc. as important evaluation criteria.

The present book on Elements of Mechanical Engineering is meant for the engineering students of all branches at their first year level. It covers the new syllabus of panjab Technical University, Jalandhar. However, it shall be useful to students of other Universities also. The book covers the basic principles of Thermodynamics, zeroth law of Thermodynamics and the concept of temperature in the first chapter.

The Assistant Mechanical Engineer Passbook(R) prepares you for your test by

allowing you to take practice exams in the subjects you need to study.

This edition has been thoroughly revised and enlarged. It is still considered to be a must for all those sitting Civil Engineering examinations.

Fans of Chris Ferrie's ABCs of Biology, ABCs of Space, and ABCs of Physics will love this introduction to engineering for babies and toddlers! This alphabetical installment of the Baby University baby board book series is the perfect introduction to science for infants and toddlers. It makes a wonderful science baby gift for even the youngest engineer. Give the gift of learning to your little one at birthdays, baby showers, holidays, and beyond! A is for Amplifier B is for Battery C is for Carnot Engine From amplifier to zoning, the ABCs of Engineering is a colorfully simple introduction to STEM for babies and toddlers to a new engineering concept for every letter of the alphabet. Written by two experts, each page in this engineering primer features multiple levels of text so the book grows along with your little engineer. If you're looking for the perfect STEAM book for teachers, science toys for babies, or engineer toys for kids, look no further! ABCs of Engineering offers fun early learning for your little scientist!

Updated Edition Includes a New Chapter and Enhanced Study Material The second edition of Environmental Microbiology for Engineers explores the role that microorganisms play in the engineered protection and enhancement of an

environment. Offering a perfect balance of microbiological knowledge and environmental biotechnology principles, it provides a practical understanding of microorganisms and their functions in the environment and in the environmental engineering systems. The book also presents a quantitative description of applied microbiological processes and their engineering design. This updated edition adds a new chapter on construction biotechnology, and offers new end-of-chapter exam questions with solutions to aid readers with performing the design calculations needed and to enhance understanding of the material. The book covers essential topics that include: Diversity and functions of microorganisms in environmental engineering systems Environmental bioengineering processes Applied microbial genetics and molecular biology Microbiology of water and wastewater treatment Biotreatment of solid waste and soil bioremediation Microbial monitoring of environmental engineering systems Biocorrosion and biodeterioration of materials Biocementation and bioclogging of soil Biopollution of indoor environment Biofouling of facilities, and more Environmental Microbiology for Engineers provides a practical understanding of microorganisms in the civil engineering process and their functions in the environmental engineering systems, and is designed for practicing environmental engineers working in the areas of wastewater, solid waste treatment, soil remediation and

ground improvement.

The revised and updated edition includes the latest developments in the field of ERP, information technology and new technologies that are changing the ERP landscape. Divided into eight sections, the book covers ERP Basics, ERP and Technology, ERP Implementation, Operation and Maintenance of the ERP system, Business Modules of ERP, ERP Market, Present and Future of ERP, ERP Resources, Case studies, Career guidance, Manufacturing perspective, etc.

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