



UNIVERSITY OF SAN CARLOS  
The Library System  
Engineering Library

# *Acquisitions List*

FIRST SEMESTER 2011-2012

## CHEMICAL ENGINEERING AND RELATED SUBJECTS

Andrzej Wieckowski (Editor). 2010. Fuel cell science : theory, fundamentals, and biocatalysis. Hoboken, N.J. :Wiley.  
**621.312429/F95**

"This book provides a modern problem-solving compendium to help meet challenges in fuel cell science and technology worldwide. Along with the scientific foundation of this technology, the coverage includes recently developed strategies for the design, preparation, and characterization of catalytic materials for fuel cell electrodes, especially for new fuel cell cathodes. The methodology described includes a wide spectrum of methods for spurring new fuel cell catalysis concepts and improving existing designs to increase their performance. This is a key resource for a wide range of engineering and research scientist, professionals, and entrepreneurs"-- Provided by publisher.

Bakeev, Katherine A. 2010. 2<sup>nd</sup> ed. Process analytical technology: spectroscopic tools and implementation strategies for the chemical and pharmaceutical industries. Chichester, West Sussex : Wiley.  
**660.2/P94**

*Process Analytical Technology(PAT)* explores the concepts of PAT and its application in the chemical and pharmaceutical industry from the point of view of the analytical chemist. In this new edition all of the original chapters have been updated and revised, and new chapters covering the important topics of sampling, NMR, fluorescence, and acoustic chemometrics have been added. This volume is an important starting point for anyone wanting to implement PAT and is intended not only to assist a newcomer to the field but also to provide up-to-date information for those who practice process analytical chemistry and PAT. It is relevant for chemists, chemical and process engineers, and analytical chemists working on process development, scale-up and production in the pharmaceutical, fine and specialty chemicals industries, as well as for academic chemistry, chemical engineering, chemometrics and pharmaceutical science research groups focusing on PAT.

Cheng, Jay, ed. 2010. Biomass to renewable energy processes. Boca Raton : CRC Press/Taylor & Francis.  
**662.88/B52**

An introduction to fundamental principles and practical applications, **Biomass to Renewable Energy Processes** explains the theories of biological processes, biomass materials and logistics, and conversion technologies for bioenergy products such as biogas, ethanol, butanol, biodiesel, and synthetic gases. The book discusses anaerobic digestion of waste materials for biogas and hydrogen production, bioethanol and biobutanol production from starch and cellulose, and biodiesel production from plant oils. It addresses thermal processes, including gasification and pyrolysis of agricultural residues and woody biomass. The text also covers pretreatment technologies, enzymatic reactions, fermentation, and microbiological metabolisms and pathways. It explores the engineering principles of biomass gasification and pyrolysis and potential end-

products. This volume is a major achievement for its coverage of the production and implementation of biologically based resources, and related principles and technologies.

Eckenfelder, Weskel. Jr. 2009. 4<sup>th</sup> ed. Industrial water quality. New York : McGraw-Hill.  
**628.3/Ec55**

The classic guide to controlling industrial water pollution—updated with the latest regulations and new technologies. Turn to the Fourth Edition of *Industrial Water Quality* for guidance on state-of-the-art methods for optimizing or upgrading existing wastewater treatment systems, as well as selecting the best treatment options to solve specific wastewater problems. This hands-on tool reflects today's more stringent water-quality regulations and the new technologies developed to meet them. Filled with examples and case studies from a variety of industries, the book covers reverse osmosis or alternative membrane processes and discusses Biological Nutrient Removal (BNR) processes.

Engel, Thomas. 2010. 2<sup>nd</sup> ed. Thermodynamics, statistical thermodynamics, & kinetics.  
New York : Prentice Hall.  
**536.7/En32**

This full-color, modern physical chemistry text offers arresting illustrations that set it apart from others of its kind. The authors focus on core topics of physical chemistry, presented within a modern framework of applications. Extensive math derivations are provided, yet the book retains the significant chemical rigor needed in physical chemistry.

Jackson, Kenneth A. 2010. 2<sup>nd</sup> ed. Kinetic processes: crystal growth, diffusion, and phase transitions in materials. Weinheim : John Wiley.  
**530.136/J13**

In this completely revised edition, all the chapters have been updated to reflect the current state of crystal growth kinetics. At the same time, fifteen percent additional content now allows coverage of computer-assisted modeling of second-order phase changes, microstructure development, novel data and images of coarsening mechanisms, with the most significant single addition being breakthrough results on spinodal decomposition -- published here for the first time in book form. The refined didactical approach with a streamlined presentation now allows readers to grasp the kinetic concepts even more easily, coherently introducing the field of kinetic processes, especially those involved in crystal growth, and explaining such phenomena as diffusion, nucleation, segregation and phase transitions at a level accessible to graduate students. In addition to the basic kinetic concepts, the textbook presents modern applications where these processes play a major role, including ion implantation, plasma deposition and rapid thermal processing.

Zhao, Tim, ed. 2009. Micro fuel cells: principles and applications. Amsterdam : Academic Press.  
**621.312429/M58**

The book starts with a clear and rigorous exposition of the fundamentals engineering principles governing energy conversion for small electronic devices, followed by self-contained chapters concerning applications. The authors provide original points of view on all types of commercially available micro fuel cells types, including micro proton exchange membrane fuel cells, micro direct methanol fuel cells, micro solid oxide fuel cells and micro bio-fuel cells. The book also contains a detailed introduction to the fabrication of the components and the assembly of the system, making it a valuable reference both in terms of its application to product design and understanding micro engineering principles. An overview of the micro fuel cell systems and applications; a detailed introduction to the fabrication of the components and the assembly of the system; original points of view on prospects of micro fuel cells.

## CIVIL ENGINEERING AND RELATED SUBJECTS

Arya, Chanakya. 2009. 3<sup>rd</sup> ed. Design of structural elements: concrete, steelwork, masonry and timber designs to British Standards and Eurocodes. London : Spon Press.

**624.1771021841/Ar97**

Now in its third edition this popular textbook provides a concise single volume introduction to the design of structural elements in concrete, steel, timber, masonry and composites. Up to date design principles and guidance are given in line with both British Standards and Eurocodes, current as of late 2007. An accompanying solutions manual is available online.

Bouazza, Abdelmalek. 2010. Geosynthetic clay liners for waste containment facilities. Boca Raton, FL : CRC Press.

**628.44564/G29**

Increasingly stringent regulation of pollution and waste production worldwide drives the need to isolate contaminants that pose a threat to human and environmental health by using engineered barrier systems involving the use of low permeable materials. Over the past two decades, geosynthetic clay liners have gained widespread acceptance for use in such barrier systems. They are often used as a component of primary and secondary base liners or final cover systems in municipal solid-waste landfills as well as in regulated industrial storage and mining waste-disposal facilities. This book gives a comprehensive and authoritative review of the current state of practice on geosynthetic clay liners in waste containments. It provides an insight into individual materials (bentonite and the associated geosynthetics) and the manufacturing processes. This is followed by the coverage of important topics such as hydraulic conductivity, chemical compatibility, contaminant transport, gas migration, shear strength and slope stability, and field performance.

Budinski, Kenneth G. 2010. 9<sup>th</sup> ed. Engineering materials : properties and selection. Upper Saddle River, N.J. : Prentice Hall.

**620.11/B85**

The father-son authoring duo of Kenneth G. Budinski and Michael K. Budinski brings nearly 70 years of combined industry experience to bear in this practical, reader-friendly introduction to engineering materials. This text covers theory and industry-standard selection practices, providing students with the working knowledge to make an informed selection of materials for engineering applications and to correctly specify materials on drawings and purchasing documents. Encompassing all significant material systems—metals, ceramics, plastics, and composites—this text incorporates the most up-to-date information on material usage and availability, addresses the increasingly global nature of the field, and reflects the suggestions of numerous adopters of previous editions. For undergraduate courses in Metallurgy and Materials Science

Chowdhury, Robin. 2010. Geotechnical slope analysis. Boca Raton : CRC Press.

**624.151363/C45**

Freshly updated and extended version of Slope Analysis (Chowdhury, Elsevier, 1978). This reference book gives a complete overview of the developments in slope engineering in the last 30 years. Its multi-disciplinary, critical approach and the chapters devoted to seismic effects and probabilistic approaches and reliability analyses, reflect the distinctive style of the original. Subjects discussed are: the understanding of slope performance, mechanisms of instability, requirements for modeling and analysis, and new techniques for observation and modeling. Special attention is paid to the relation with the increasing frequency and consequences of natural and man-made hazards. Strategies and methods for assessing landslide susceptibility, hazard and risk are also explored. Moreover, the relevance of geotechnical analysis of slopes in the context of climate change scenarios is discussed. All theory is supported by numerous examples.

Davidson-Arnott, Robin. 2010. Introduction to coastal processes and geomorphology. New York : Cambridge University Press.

**551.457/D28**

Written for undergraduate students studying coastal geomorphology, this is the complete guide to the processes at work on our coastlines and the features we see in coastal systems across the world. Accessible to students from a range of disciplines, the quantitative approach of this book helps to build a solid understanding of wave and current processes that shape coastlines. The resulting processes of erosion, transport and deposition and the features they create are clearly explained, with over 400 illustrations and photographs. From sandy

beaches to coral reefs, the major coastal features are related to contemporary processes and to sea-level changes over the past 25,000 years. Key equations describing or predicting measurements from instruments used to map these processes are all presented in this wide-ranging overview. Davidson-Arnott completes this teaching package with online material that brings the subject to life, including videos of coastal processes and virtual field trips.

Emmitt, Stephen. 2010. 2<sup>nd</sup> ed. Introduction to coastal processes and geomorphology. Chichester, U.K. ; Ames, Iowa : Wiley-Blackwell.  
**690/Em66**

This new edition of Barry's *Advanced Construction of Buildings* retains the emphasis on larger-scale buildings: primarily residential, commercial and industrial buildings constructed with load bearing frames. A considerable amount of new material has been added but the text remains faithful to Barry's original concept of explaining construction technology through key functional and performance requirements for the main elements common to all buildings. Of particular note in this new edition is the expanded coverage of building and construction sustainability. This is now presented within the main body of the text, rather than as a separate chapter. Material relating to the Building Regulations has been brought fully up to date, and there is a more thorough treatment of demolition. The rest of the text has been updated as required, with particular attention paid to the illustrations. Advanced undergraduate students and those working towards similar NQF level 5 and 6 qualifications in building and construction will find this the ideal book with which to continue their study of the subject.

Garber, Nicholas J. 2010. 4<sup>th</sup> SI ed. Traffic & highway engineering. Australia ; United States : Cengage Learning.  
**625.7/G16**

The new edition of Garber and Hoel's best-selling text focuses on giving students insight into all facets of traffic and highway engineering. Students generally come to this course with little knowledge or understanding of the importance of transportation, much less of the extensive career opportunities within the field. Transportation is an extremely broad field, and courses must either cover all transportation modes or focus on specifics. While many topics can be covered with a survey approach, this often lacks sufficient depth and students leave the course without a full understanding of any of the fields. This text focuses exclusively on traffic and highway engineering beginning with a discussion of the pivotal role transportation plays in our society, including employment opportunities, historical impact, and the impact of transportation on our daily lives. This approach gives students a sense of what the field is about as well as an opportunity to consider some of its challenges. Later chapters focus on specific issues facing transportation engineers. The text uses pedagogical tools such as worked problems, diagrams and tables, reference material, and realistic examples to demonstrate how the material is applied.

Germaine, John T. 2009. Geotechnical laboratory measurements for engineers. Hoboken, N.J. : John Wiley.  
**624.1510287/G31**

Cost effective, high quality testing of geo-materials is possible if you understand the important factors and work with nature wisely. *Geotechnical Laboratory Measurements for Engineers* guides geotechnical engineers and students in conducting efficient testing without sacrificing the quality of results. Useful as both a lab manual for students and as a reference for the practicing geotechnical engineer, the book covers thirty of the most common soil tests, referencing the ASTM standard procedures while helping readers understand what the test is analyzing and how to interpret the results. Features include: Explanations of both the underlying theory of the tests and the standard testing procedures; The most commonly-taught laboratory testing methods, plus additional advanced tests; Unique discussions of electronic transducers and computer controlled tests not commonly covered in similar texts; A support website at [www.wiley.com/college/germaine](http://www.wiley.com/college/germaine) with blank data sheets you can use in recording the results of your tests as well as Microsoft Excel® spreadsheets containing raw data sets supporting the experiments. A comprehensive guide to the most useful geotechnical laboratory measurements.

Goetsch, David L. 2010. Construction safety and the OSHA Standards. Boston : Prentice Hall.  
**690.22021873/G55**

This new offering tackles issues and standards relating to construction safety. Written to address the complexities of today's job sites, it prepares students to handle all of the safety, health, and compliance responsibilities of even the largest construction projects. Divided into three parts, it covers not only the construction-related OSHA standards, but also essential safety topics such as accident causation theories and ethics and safety. Using key words, review questions, and end-of-chapter activities, it helps those individuals who are responsible for safety and health in one of the most potentially dangerous industries—the construction industry.

Gooch, Geoffrey D. ed. 2010. Science, policy and stakeholders in water management: an integrated approach to river basin management. London : Earthscan, 2010.  
**363.61094/Sci27**

One of the major problems facing practitioners and scientists working with water management is how to integrate knowledge and experiences from scientific, policy and stakeholder perspectives. In this book this science-policy-stakeholder interface (SPSI) is examined both analytically and through the description of practical experiences from river basins in Europe, India and South-East Asia. These include the Tungabhadra (India), Sesan (Vietnam/Cambodia), Tagus (Spain/Portugal) and Glomma (Norway), which particularly highlight issues associated with pollution, severely altered river flows and transboundary conflicts. Following two chapters which lay the framework for the book, the authors describe how SPSI was managed in the case study basins and how stakeholder participation and scenarios were used to integrate different perspectives, and to facilitate the communication of different forms of knowledge. Four important aspects of water management and SPSI are then discussed; these are water pollution, land and water interaction, environmental flow and transboundary water regimes. Short descriptions of the case study rivers are provided together with analyses of how SPSI was managed in water management in these basins and policy recommendations for the basins. The book concludes by providing a series of recommendations for improving the science-policy-stakeholder interface in water management. It represents a major step forward in our understanding of how to implement integrated water resources management.

Kavanagh, Barry F. 2010. 7<sup>th</sup> ed. Surveying with construction applications. Upper Saddle River, N.J. : Prentice Hall.  
**526.9/K17**

Known for its state-of-the-art coverage and clear, concise approach, *Surveying with Construction Applications, Seventh Edition* covers the latest advances and foundational principles of surveying. Emphasizing instrumentation technology, field data capture, and data-processing techniques, this text highlights real-world applications of surveying to the construction and engineering fields. Ideal as a reference in the field, additional complexities in electronic distance measurement and the order of presentation of surveying topics have been revised in this edition. All state Departments of Transportation (DOTs) in the U.S. and the provincial Transportation/Highways Departments in Canada conduct extensive training sessions for their large staffs. This book covers topics that are taught in these training sessions, in addition to all of the introductory topics needed for survey training.

Klingner, R.E. 2010. Masonry structural design. New York : McGraw-Hill.  
**693.1/K68**

*Masonry Structural Design* emphasizes the strength design of masonry and includes allowable-stress provisions. Innovations such as autoclaved aerated concrete masonry (AAC) are also discussed. Real-world case studies featuring a low-rise building with reinforced concrete masonry and a four-story building with clay masonry illustrate the techniques presented in this comprehensive resource. *Coverage includes:* Basic structural behavior and design of low-rise, bearing wall buildings; Materials used in masonry construction; Code basis for structural design of masonry buildings, including seismic design; Introduction of MSJC treatment of structural design; Strength design of reinforced and unreinforced masonry elements; Allowable-stress design of reinforced and unreinforced masonry elements; Comparison of design by the allowable-stress approach versus the strength approach; Lateral load analysis of shear wall structure; Design and detailing of floor and roof diaphragms.

Levy, Sidney M. 2010. Construction process planning and management: an owner's guide to successful projects. Amsterdam : Butterworth-Heinemann.  
**690/L57**

By their very nature, construction projects can create seemingly endless opportunities for conflict. Written by a bestselling author with over 40 years of experiences in the construction and general contracting business, *Construction Process Planning and Management* provides you with the necessary tools to save time and money on your construction project. In this book, Sid Levy provides valuable advice for avoiding or working through the common problems that are a result of the long-term nature of construction projects, failure to select a ?project delivery system? appropriate to the project, incomplete drawing and specifications, unrealistic scheduling, poor communication and coordination among participants, and inadequate contract administration. From project genesis, through design development to contractor and contract selection, on to construction oversight, punch list and successful project close-out, this book will point out those pitfalls to avoid and offer practical advice at every step along the way.

MacDonald, Joseph. 2009. 5<sup>th</sup> ed. Handbook of rigging: for construction and industrial operations. New York : McGraw Hill.  
**621.862/M14**

Recent years have seen an abundance of changes in the rigging industry. This popular, hands-on reference brings you completely up to date on equipment, materials, systems, and regulations that affect your profession. Whether you are a maintenance technician, hoist operator, worksite foreman, or any other specialist requiring the use of rigging equipment, this comprehensive guide will help ensure that your projects are completed in a cost-effective manner, without sacrificing safety and efficiency. Inside this fully updated guide to rigging: A broader-than-ever look at lifting, hoisting, and scaffolding operations; Brand-new section covering the safe operation of equipment and rigging systems; Up-to-date information on EPA and OSHA regulations governing the use of rigging equipment; Directory of associations that publish research on safe rigging; Bibliography of references that cover related subjects concerning rigging. The Ultimate Guide to Designing and Operating Safe, Efficient Rigging Systems.

Mount, Nick. 2009. Representing, modeling, and visualizing the natural environment (Innovations in GIS). Boca Raton : CRC Press.  
**910.285/R29**

The papers are divided into three groups, each focusing on the application of GIS and GIScience to the natural environment. These thematic groups are: representation, modeling, and visualization. The opening chapter provides a clear introduction to the context and scope of the volume, defining the range of 'natural environments' considered in various explorations of the three main research themes, and providing a useful overview of how GIS/GIScience has been applied to geographic challenges to date. The authors use this as a foundation to establish the key objective of the volume: to explore how GIS/GIScience as we know it is being applied in increasingly public arenas, using a range of new techniques and technologies to visualize and interact with representations and models of natural environments.

Nolan, Michael S. 2011. 5<sup>th</sup> ed. Fundamentals of air traffic control. Belmont, CA : Delmar Cengage Learning.  
**629.1366/N71**

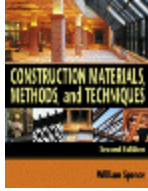
FUNDAMENTALS OF AIR TRAFFIC CONTROL 5E is an authoritative book that provides readers with a good working knowledge of how and why the air traffic control system works. This book is appropriate for future air traffic controllers, as well as for pilots who need a better understanding of the air traffic control system. FUNDAMENTALS OF AIR TRAFFIC CONTROL 5E discusses the history of air traffic control, emphasizing the logic that has guided its development. It also provides current, in-depth information on navigational systems, the air traffic control system structure, control tower procedures, radar separation, national airspace system operation and the FAA's restructured hiring procedures. This is the only college level book that gives readers a genuine understanding of the air traffic control system and does not simply require them to memorize lists of rules and regulations.

Pillai, S.U. 2009. 3<sup>rd</sup> ed. Reinforced concrete design. New Delhi : Tata McGraw-Hill.  
**624.18341/P64**

Shi, Zihai. 2009. Crack analysis in structural concrete: theory and applications. Burlington, MA : Butterworth-Heinemann.  
**620.1366/Sh61**

This new book on the fracture mechanics of concrete focuses on the latest developments in computational theories, and how to apply those theories to solve real engineering problems. Zihai Shi uses his extensive research experience to present detailed examination of multiple-crack analysis and mixed-mode fracture. Compared with other mature engineering disciplines, fracture mechanics of concrete is still a developing field with extensive new research and development. In recent years many different models and applications have been proposed for crack analysis; the author assesses these in turn, identifying their limitations and offering a detailed treatment of those which have been proved to be robust by comprehensive use.

Spence, William P. 2011. 3<sup>rd</sup> ed. Construction materials, methods and techniques: building for a sustainable future. Australia ; Clifton Park, NY : Delmar, Cengage Learning.  
**690/Sp35**



Explore the most up-to-date green methods for residential and commercial building construction, along with the construction materials and properties needed to carry them out with this newly revised book. *CONSTRUCTION MATERIALS, METHODS AND TECHNIQUES: BUILDING FOR A SUSTAINABLE FUTURE, 3E* offers comprehensive coverage of these topics and presents them using a logical, well-structured format that follows the natural sequence of a construction project. With an emphasis in providing the most current information available, including sustainability and green design, this third edition is fully equipped with content that reflects the 2004 Edition of Construction Specifications Institute (CSI) MasterFormat and information that is based on the input of hundreds of today's top manufacturers and professional and trade organizations. In addition, relevant building codes are frequently referenced, rounding out this need-to-know coverage that is critical to success in the industry.

Tamboli, Akbar. 2010. 2<sup>nd</sup> ed. Handbook of steel connection design and details. New York : McGraw-Hill.  
**624.1821/H19**

Fully updated with the latest AISC and ICC codes and specifications, *Handbook of Structural Steel Connection Design and Details*, Second Edition, is the most comprehensive resource on load and resistance factor design (LRFD) available. This authoritative volume surveys the leading methods for connecting structural steel components, covering state-of-the-art techniques and materials, and includes new information on welding and connections. Hundreds of detailed examples, photographs, and illustrations are found throughout this practical handbook. *Handbook of Structural Steel Connection Design and Details*, Second Edition, covers: Fasteners and welds for structural connections; Connections for axial, moment, and shear forces; Welded joint design and production; Splices, columns, and truss chords; Partially restrained connections; Seismic design; Structural steel details; Connection design for special structures; Inspection and quality control; Steel deck connections; Connection to composite members.

Turner, Joe M. 2009. Excavation systems planning, design, and safety. New York : McGraw-Hill.  
**624.152/T85**

*Excavation Systems Planning, Design, and Safety* is a thorough guide to ensuring your projects are completed correctly, safely, and cost effectively. Concisely written and presented in an easy-to-navigate format, this comprehensive guide arms you with the most current information available. New developments and trends, along with numerous design examples, illustrations, and important OSHA requirements and other legal issues, provide everything in your field. Ideal for anyone involved in the trade, this indispensable resource brings you up to date on all you'll need to see the critical aspects of your job. Includes: Shoring Designs Standards; Best Practices in Safety Planning; Techniques for Protecting Subsurface Utilities; Soil Classification; Soil Loading on Shoring Systems; OSHA Standards; Information on Equipment.

Vesilind, P. Aarne. 2010. 3<sup>rd</sup> ed. Introduction to environmental engineering. Belmont, CA : Thomson/Brook/Cole.  
**628/V63**

This text presents a balanced treatment of environmental engineering by combining engineering concepts with the importance of environmental ethics. This third edition highlights sustainable development and emphasizes the need for engineers to become even more environmentally responsible during this time of increasing awareness of environmental concerns. The authors challenge students with problems that require not only a technical solution but a thorough consideration of its ethical ramifications. The text also provides comprehensive exposure to all types of environmental problems, including ecosystem dynamics, wastewater treatment, and air pollution control.



Woodson, R. Dodge. 2009. Be a successful green land developer. New York : McGraw-Hill.

**333.330684/W86**



Bestselling author R. Dodge Woodson brings the growing number of options available for developing land without doing harm to natural areas. In this comprehensive guide, he explains how such building techniques will increase sales, improve the bottom line, and help sustain the environment. *Be a Successful Green Land Developer* addresses all the practical issues that arise when embarking upon green building projects. It explains every aspect of the subject, from getting started in the green building business to mastering green terminology to making money with green methods. Learn how to understand zoning requirements, covenants, and restrictions...write winning proposals...and expand business. The book also examines 20 common mistakes and how to avoid them. This practical, plain-English guide to green land development includes: Valuable tips on preparing winning bids; Step-by-step advice on expanding a green building business; Important insight into the costs associated with earth-friendly land development; Sample contracts, zoning forms, and development /broker forms.

United Nations Human Settlements Programme. 2010. Solid waste management in the world's cities: water and sanitation in the worlds cities 2010. London : UN-HABITAT/Earthscan.

**363.7285091732/So44**

In our rapidly urbanizing global society, solid waste management will be a key challenge facing all the world's cities. Solid Waste Management in the World's Cities provides a fresh perspective and new data on one of the biggest issues in urban development. Using the framework of Integrated Sustainable Waste Management (ISWM), the report brings together unprecedented research from 22 cities across six continents. It uncovers the rich diversity of waste management systems that are in place throughout the world, and draws out the practical lessons for policymakers. The volume will be essential reading for all professionals and policymakers in the field, as well as a valuable resource for researchers and students in all aspects of urban development. 'Managing solid waste is one of the biggest challenges of urban areas ... [This publication] seeks to showcase the good work that is being done on solid waste by cities around the world.' Anna Tibaijuka, Under Secretary General of the United Nations and Executive Director of UN-Habitat

## **COMPUTER ENGINEERING AND RELATED SUBJECTS**

Blumel, Reinhold. 2010. Foundations of quantum mechanics: from photons to quantum computers. Sudbury, Mass. : Jones and Bartlett Publishers.

**530.12/B62**

Quantum computers are the proposed centerpieces of a revolutionary, 21st century quantum information technology. Ideal for undergraduate and graduate courses in modern quantum physics, *Foundations of Quantum Mechanics: From Photons to Quantum Computers* takes the reader into the fascinating world of quantum mechanics and continues on an in-depth study of quantum information and quantum computing, including an entire chapter on the future of quantum technology. This accessible text with modern applications focuses on what is quantum about quantum mechanics; topics discussed include the EPR paradox, entanglement, teleportation, Bell's Theorem, quantum computing, and code-breaking with quantum computers.

Dix, Mark. 2010. Discovering AutoCAD 2010. Boston : Prentice Hall.

**620.00420285536/D64**

*Discovering AutoCAD 2010* presents a hands-on, activity-based approach to the use of AutoCAD as a drafting tool—complete with techniques, tips, shortcuts, and insights that improve efficiency. Topics and tasks are carefully grouped to lead students logically through the AutoCAD command set, with the level of difficulty increasing steadily as skills are acquired through experience and practice. Straightforward explanations focus on what is relevant to actual drawing procedures, and illustrations show exactly what to expect on the computer screen. This edition features Web-based exercises, projects, and new test questions for each chapter.



Gertsbakh, I. B. (Il'ia Borukhovich). 2010. Models of network reliability: analysis, combinatorics, and Monte Carlo. Boca Raton : CRC Press.

**621.3821/G32**

Unique in its approach, **Models of Network Reliability: Analysis, Combinatorics, and Monte Carlo** provides a brief introduction to Monte Carlo methods along with a concise exposition of reliability theory ideas. From there, the text investigates a collection of principal network reliability models, such as terminal connectivity for networks with unreliable edges and/or nodes, network lifetime distribution in the process of its destruction, network stationary behavior for renewable components, importance measures of network elements, reliability gradient, and network optimal reliability synthesis.

Goodrich, Michael T. 2011. 5<sup>th</sup> ed., Int'l student version. Data structures and algorithms in Java. Hoboken, N.J. : J. Wiley & Sons (Asia).

**005.1/G59**

This newest edition examines fundamental data structures by following a consistent object-oriented framework that builds intuition and analysis skills of data structures and algorithms: Presents new figures, simpler language, and more practical motivations from real-world scenarios; Numerous illustrations, Web-based animations, and simplified mathematical analyses help readers quickly learn important concepts .

Horstmann, Cay S. 2010. 4<sup>th</sup> ed., Int'l student version. Big Java. Hoboken, N.J. : Wiley.

**005.133/H79**

This book introduces programmers to objects at a gradual pace. The syntax boxes are revised to show typical code examples rather than abstract notation. This includes optional example modules using Alice and Greenfoot. The examples feature annotations with dos and don'ts along with cross references to more detailed explanations in the text. New tables show a large number of typical and cautionary examples. New programming and review problems are also presented that ensure a broad coverage of topics. In addition, Java 7 features are included to provide programmers with the most up-to-date information.

Horstmann, Cay S. 2010. Java for everyone. Hoboken, NJ : John Wiley & Sons.

**005.133/H79**

Programmers, computer scientists, and engineers need a book that delivers the essentials of how to program using Java in a more accessible, less rigorous approach. Java for Everyone provides them with a more user-friendly, graphics-intensive design that conveys complex concepts simply and effectively. It differs from other books in the market by focusing on topics such as loops and graphical interfaces, while avoiding a focus on object-orientation. The emphasis is placed on simple programs that use pre-built data structures and algorithms whenever possible. The examples and case studies explore practical applications that programmers, computer scientists, and engineers will find useful, such as processing tabular data, harvesting Web information, creating custom graphics, and building simple user interfaces.

Hwang, Jenq-Neng. 2009. Multimedia networking: from theory to practice. Cambridge, UK : Cambridge University Press.

**006.7/H99**

This authoritative guide is the first to provide a complete system design perspective based on existing international standards and state-of-the-art networking and infrastructure technologies, from theoretical analyses to practical design considerations. The four most critical components involved in a multimedia networking system - data compression, quality of service (QoS), communication protocols, and effective digital rights management - are intensively addressed. Many real-world commercial systems and prototypes are also introduced, as are software samples and integration examples, allowing readers to understand practical tradeoffs in the design of multimedia architectures, and get hands-on experience learning the methodologies and procedures. Balancing just the right amount of theory with practical design and integration knowledge, this book is ideal for graduate students and researchers in electrical engineering and computer science, and also for practitioners in the communications and networking industry. It can also be used as a textbook for specialized graduate-level courses on multimedia networking.

Iniewski, Krzysztof, ed. 2010. Internet networks: wired, wireless, and optical technologies.

Boca Raton : Taylor & Francis.

**621.3821/In81**

In the not too distant future, internet access will be dominated by wireless networks. With that, wireless edge using optical core next-generation networks will become as ubiquitous as traditional telephone networks. This means that telecom engineers, chip designers, and engineering students must prepare to meet the challenges and opportunities that the development and deployment of these technologies will bring. Bringing together cutting-edge coverage of wireless and optical networks in a single volume, **Internet Networks Wired, Wireless, and Optical Technologies** provides a concise yet complete introduction to these dynamic technologies. Filled with case studies, illustrations, and practical examples from industry, the text explains how wireless, wireline, and optical networks work together. It also: Covers WLAN, WPAN, wireless access, 3G/4G cellular, RF transmission; Details optical networks involving long-haul and metropolitan networks, optical fiber, photonic devices, and VLSI chips; Provides clear instruction on the application of wireless and optical networks. Taking into account recent advances in storage, processing, sensors, displays, statistical data analyses, and autonomic systems, this reference provides forward thinking engineers and students with a realistic vision of how the continued evolution of the technologies that touch wireless communication will soon reshape markets and business models around the world.

Justesen, Jorn. 2010. Two-dimensional information theory and coding: with applications to graphics data and high-density storage media. Cambridge, UK : Cambridge University Press.

**005.72/J98**

This complete introduction to two-dimensional (2-D) information theory and coding provides the key techniques for modeling data and estimating their information content. Throughout, special emphasis is placed on applications to transmission, storage, compression, and error protection of graphic information. The book begins with a self-contained introduction to information theory, including concepts of entropy and channel capacity, which requires minimal mathematical background knowledge. It then introduces error-correcting codes, particularly Reed-Solomon codes, the basic methods for error-correction, and codes applicable to data organized in 2-D arrays. Common techniques for data compression, including compression of 2-D data based on application of the basic source coding, are also covered, together with an advanced chapter dedicated to 2-D constrained coding for storage applications. Numerous worked examples illustrate the theory, whilst end-of-chapter exercises test the reader's understanding, making this an ideal book for graduate students and also for practitioners in the telecommunications and data storage industries.

Koffman, Elliot. 2010. 2<sup>nd</sup> ed. Data Structures: abstraction and design using JAVA. Hoboken, NJ : John Wiley, 2010.

**005.2762/K82**

Merani, Maria Luisa. 2009. Hands-on networking: from theory to practice. Cambridge, UK ; New York : Cambridge University Press.

**004.6/M53**

Learn the core theory and explore real-world networking issues with this richly illustrated example-based textbook. It provides an accurate view of modern networks through detailed coverage of the most relevant networking technologies, with no unnecessary extras. Carefully designed, affordable laboratory exercises based on open-source software networking tools are included for hands-on practice with real networking devices. Numerous case studies and examples further link theory to practice, whilst the topologies, tools and configurations needed to carry out practical exercises are provided to guide students through each task. Its bottom-up approach is easy for students to follow and perfect for lab-oriented courses.

Pfleege, Shari Lawrence. 2010. 4<sup>th</sup> International ed. Software engineering: theory and practice. Boston : Pearson Education.

**005.1/P48**

This introduction to software engineering and practice addresses both procedural and object-oriented development. Is thoroughly updated to reflect significant changes in software engineering, including modeling and agile methods. Emphasizes essential role of modeling design in software engineering. Applies concepts consistently to two common examples — a typical information system and a real-time system. Combines theory with real, practical applications by providing an abundance of case studies and examples from the current literature. A useful reference for software engineers.

Pressman, Roger. 2009. Web engineering: a practitioner's approach. Boston : McGraw-Hill Higher Education.  
**006.76/P92**

Qian, Kai., et al. 2010. Software architecture and design illuminated. Sudbury, Mass. : Jones and Bartlett Publishers.  
**005.12/So23**

The SE 2004 of the ACM/IEEE computing curriculum project recommends software design and architecture as one of its ten essential areas of study. Software Architecture and Design Illuminated is the ideal text for upper-level undergraduate and graduate students delving into this important area of the software development process. This text offers a coherent and integrated approach to the discipline of software architectural design and covers a complete set of important methodologies, architectural styles, design guidelines, and design tools. The Java language is used throughout the book to explain design principles and present case studies. Review questions, exercises, and design assignments round out each chapter and allow students to test themselves on key material.

Wu, C. Thomas. 2011. 5<sup>th</sup> ed. Introduction to object-oriented programming with JAVA. Boston : McGraw Hill Higher Education.  
**005.133/W95**

## **ELECTRICAL/ELECTRONICS & COMMUNICATION ENGINEERING AND RELATED SUBJECTS**

Ballou, Glen. 2008. 4<sup>th</sup> ed. Handbook for Sound Engineers. Amsterdam : Focal Press.  
**621.3893/H19**

Handbook for Sound Engineers is the most comprehensive reference available for audio engineers. All audio topics are explored: if you work on anything related to audio you should not be without this book! The 4th edition of this trusted reference has been updated to reflect changes in the industry since the publication of the 3rd edition in 2002 -- including new technologies like software-based recording systems such as Pro Tools and Sound Forge; digital recording using MP3, wave files and others; mobile audio devices such as iPods and MP3 players. Over 40 topics are covered and written by many of the top professionals for their area in the field, including Glen Ballou on interpretation systems, intercoms, assistive listening, and image projection; Ken Pohlmann on compact discs and DVDs; David Miles Huber on MIDI; Dr. Eugene Patronis on amplifier design and outdoor sound systems; Bill Whitlock on audio transformers and preamplifiers; Pat Brown on fundamentals and gain structures; Ray Rayburn on virtual systems and digital interfacing; and Dr. Wolfgang Ahnert on computer-aided sound system design and acoustics for concert halls.

Bogatin, Eric. 2010. 2<sup>nd</sup> ed. Signal and power integrity – simplified. Upper Saddle River, NJ : Prentice Hall.  
**621.3822/B63**

This book brings together up-to-the-minute techniques for finding, fixing, and avoiding signal integrity problems in your design. Drawing on his work teaching more than five thousand engineers, world-class signal and power integrity expert Eric Bogatin systematically reviews the root causes of all six families of signal integrity problems and shows how to design them out early in the design cycle. This edition's extensive new content includes a brand-new chapter on S-parameters in signal integrity applications, and another on power integrity and power distribution network design—topics at the forefront of contemporary electronics design. Coverage includes: A fully up-to-date introduction to signal integrity and physical design; 0000000; How design and technology selection can make or break the performance of the power distribution network; Exploration of key concepts, such as plane impedance, spreading inductance, decoupling capacitors, and capacitor loop inductance; Practical techniques for analyzing resistance, capacitance, inductance, and impedance; Solving signal integrity problems via rules of thumb, analytic approximation, numerical simulation, and measurement; Understanding how interconnect physical design impacts signal integrity; Managing differential pairs and losses; Harnessing the full power of S-parameters in high-speed serial link applications; Ensuring power integrity throughout the entire power distribution path; Realistic design guidelines for improving signal integrity, and much more. Unlike books that concentrate on theoretical derivation and mathematical rigor, this book emphasizes intuitive understanding, practical

tools, and engineering discipline. Designed for electronics industry professionals from beginners to experts it will be an invaluable resource for getting signal integrity designs right the first time, every time.

Bradley, Stuart. 2008. Atmospheric acoustic remote sensing. Boca Raton : CRC Press.

551.50284/B72

Sonic Detection and Ranging (SODAR) systems and Radio Acoustic Sounding Systems (RASS) use sound waves to determine wind speed, wind direction, and turbulent character of the atmosphere. They are increasingly used for environmental and scientific applications such as analyzing ground-level pollution dispersion and monitoring conditions affecting wind energy generation. However, until now there have been no reliable references on SODAR and RASS for practitioners in the field as well as non-experts who wish to understand and implement this technology to their own applications. Authored by an internationally known expert in the design and use of SODAR/RASS technology, **Atmospheric Acoustic Remote Sensing: Principles and Applications** systematically explains the underlying science, principles, and operational aspects of acoustic radars. Abundant diagrams and figures, including eight pages of full-color images, enhance clear guidelines and tools for handling calibration, error, equipment, hardware, sampling, and data analysis. The final chapter explores applications in environmental research, boundary layer research, wind power and loading, complex terrain, and sound speed profiles. **Atmospheric Acoustic Remote Sensing** offers SODAR and RASS users as well as general remote sensing practitioners, environmental scientists, and engineers a straightforward guide for using SODARs to perform wind measurements and data analysis for scientific, environmental, or alternative monitoring applications.

Casazza, John. 2010. 2<sup>nd</sup> ed. Understanding electric power systems: an overview of the technology, the marketplace, and government regulation. Piscataway, NJ : IEEE Press.

621.3191/C26

Technological advances and changes in government policy and regulation have altered the electric power industry in recent years and will continue to impact it for quite some time. Fully updated with the latest changes to regulation, structure, and technology, this new edition of *Understanding Electric Power Systems* offers a real-world view of the industry, explaining how it operates, how it is structured, and how electricity is regulated and priced. It includes extensive references for the reader and will be especially useful to lawyers, government officials, regulators, engineers, and students, as well as the general public. The book explains the physical functioning of electric power systems, the electric power business in today's environment, and the related institutions, including recent changes in the roles of the Federal Energy Regulatory Commission and the North American Reliability Company. Significant changes that are affecting the industry are covered in this new edition, including: The expanded role of the federal government in the planning and operation of the nation's electric utilities; New energy laws and a large number of FERC regulations implementing these laws; Concerns over global warming and potential impacts on the electric industry; Pressures for expansion of the electric grid and the implementation of "smart-grid" technologies; The growing importance of various energy-storage technologies and renewable energy sources; New nuclear generation technologies; The 2009 economic stimulus package.

Cho, Yong Soo. [et al.]. 2010. MIMO-OFDM wireless communications with MATLAB.

Singapore : Wiley.

621.384/M91

MIMO-OFDM is a key technology for next-generation cellular communications (3GPP-LTE, Mobile WiMAX, IMT-Advanced) as well as wireless LAN (IEEE 802.11a, IEEE 802.11n), wireless PAN (MB-OFDM), and broadcasting (DAB, DVB, DMB). In *MIMO-OFDM Wireless Communications with MATLAB*<sup>®</sup>, the authors provide a comprehensive introduction to the theory and practice of wireless channel modeling, OFDM, and MIMO, using MATLAB<sup>®</sup> programs to simulate the various techniques on MIMO-OFDM systems.

Dorf, Richard C. 2011. 8<sup>th</sup> ed. Introduction to electric circuits. Hoboken, NJ : John Wiley & Sons.

621.31924/D73

The central theme of *Introduction to Electric Circuits* is the concept that electric circuits are a part of the basic fabric of modern technology. Given this theme, this book endeavors to show how the analysis and design of electric circuits are inseparably intertwined with the ability of the engineer to design complex electronic, communication, computer and control systems as well as consumer products. This book is designed for a one-to three-term course in electric circuits or linear circuit analysis, and is structured for maximum flexibility.

Figueiras, João. 2010. Mobile Positioning and tracking: from conventional to cooperative techniques. Chichester : Wiley.

621.384/F46

This book discusses mobile positioning solutions applied on top of current wireless communication networks. In addition, the authors introduce advanced and novel topics such as localization in heterogeneous and cooperative networks, providing a unified treatment of the topic for researchers and industry professionals alike. Furthermore, the book focuses on application areas of positioning, basics of wireless communications for positioning, data fusion and filtering techniques, fundamentals of tracking, error mitigation techniques, positioning systems and technologies, and cooperative mobile positioning systems. Key Features: Covers the state of the art of satellite- and terrestrial-based positioning systems, spanning from outdoor to indoor environments and from wide area networks to short-range networks; Discusses a whole range of topics related to mobile positioning: from fundamentals of positioning to the description of a wide spectrum of mobility models for tracking, from details on data fusion and filtering techniques to error mitigation techniques (including aspects of signal processing); Provides a solid bridge between research and industry envisaging a potential implementation of the presented solutions; Fills the gap between; Positioning and communication systems, showing how features of communication systems can be used for positioning purposes and how the retrieved location information can be used to enhance the performance of wireless networks; Includes an accompanying website This book will be a valuable guide for advanced students studying related courses. Professionals and practitioners in the field of positioning and mobile technologies, and software and service developers will also find this book of interest.

Floyd, Thomas L. 2010. 9<sup>th</sup> ed. Principles of electric circuits: conventional current version.  
Boston : Pearson Education.

**621.3192/F66**

*For DC/AC Circuits courses requiring a comprehensive, classroom tested text with an emphasis on troubleshooting and the practical application of DC/AC principles and concepts.* This text provides an exceptionally clear introduction to DC/AC circuits supported by superior exercises, examples, and illustrations and an emphasis on troubleshooting and applications. Throughout the text's coverage, the use of mathematics is limited to only those concepts that are needed for understanding. Floyd's acclaimed **troubleshooting emphasis** provides students with the problem solving experience they need to step out of the classroom and into a job!

Gibilisco, Stan. 2009. Optics demystified. New York : McGraw-Hill.

**535/G35**

Are you in the dark when it comes to understanding the science of optics? Now there's a glimmer in the gloom! *Optics Demystified* brings this challenging topic into focus. Written in an easy-to-follow format, this practical guide begins by covering the nature of light, the electromagnetic spectrum, reflection, refraction, and color dispersion. You'll move on to common optical devices and effects, lasers, and optical data transmission technology. Industrial, medical, and military applications are discussed, as are exotic optics such as holography. Detailed examples and concise explanations

Hagen, Jon B. 2009. 2<sup>nd</sup> ed. Radio-frequency electronics: circuits and applications.  
Cambridge : Cambridge University Press.

**621.38412/H12**

This second, updated edition of the best-selling Radio-Frequency Electronics introduces the basic concepts and key circuits of radio-frequency systems. It covers the fundamental principles applying to all radio devices, from wireless single-chip data transceivers to high-power broadcast transmitters. This new edition is extensively revised and expanded throughout, including additional chapters on radar, digital modulation, GPS navigation, and S-parameter circuit analysis. New worked examples and end-of-chapter problems are included to aid and test understanding of the topics covered, as well as numerous extra figures to provide a visual aid to learning. Key topics covered include filters, amplifiers, oscillators, modulators, low-noise amplifiers, phase lock loops, transformers, waveguides, and antennas. Assuming no prior knowledge of radio electronics, this is a perfect introduction to the subject. It is an ideal textbook for junior or senior courses in electrical engineering, as well as an invaluable reference for professional engineers in this area.

Keyhani, Ali. 2010. Integration of green and renewable energy in electric power systems.  
Hoboken, N.J. : Wiley.

**621.3121/K52**

A practical, application-oriented text that presents analytical results for the better modeling and control of power converters in the integration of green energy in electric power systems. The combined technology of power semiconductor switching devices, pulse width modulation algorithms, and control theories are being further developed along with the performance improvement of power semiconductors and microprocessors so that more efficient, reliable, and cheaper electric energy conversion can be achieved within the next decade. *Integration of Green and Renewable Energy in Electric Power Systems* covers the principles, analysis, and synthesis of closed loop control of pulse width modulated converters in power electronics systems, with special application emphasis on distributed generation systems and uninterruptible power supplies. The authors present two versions of a documented simulation test bed for homework problems and projects based on Matlab/Simulink, designed to help readers understand the content through simulations. The first consists of a number of problems and projects for classroom teaching convenience and learning. The second is based on the most recent work in control of power converters for

the research of practicing engineers and industry researchers. Addresses a combination of the latest developments in control technology of pulse width modulation algorithms and digital control methods; Problems and projects have detailed mathematical modeling, control design, solution steps, and results; Uses a significant number of tables, circuit and block diagrams, and waveform plots with well-designed, class-tested problems/solutions and projects designed for the best teaching-learning interaction; Provides computer simulation programs as examples for ease of understanding and platforms for the projects. Covering major power-conversion applications that help professionals from a variety of industries, *Integration of Green and Renewable Energy in Electric Power Systems* provides practical, application-oriented system analysis and synthesis that is instructional and inspiring for practicing electrical engineers and researchers as well as undergraduate and graduate students.

McCarthy, Bob. 2010. Sound system design and optimization: modern techniques and tools for sound system design and alignment. Oxford : Elsevier.  
**621.3893/M12**

In this guide to sound reinforcement alignment and design, Bob McCarthy shares his expert knowledge and effective methodology from years of teaching audio professionals. Written in a clear and easy-to-read style and illustrated with color diagrams and screenshots throughout, McCarthy's unique guide gives you all the newest techniques to ensure you perfect sound reinforcement and fulfill design needs. Outlining how sound is spread over a listening area, looking at the physics of speaker interaction, methods of alignment including mic placement, equalization, speaker placement and acoustic treatment, and now including case studies offering real world examples to fully explore different principals discussed, this book provides the definitive guide to sound reinforcement design and optimization. Totally up to date, this is the only book devoted exclusively to sound system optimization using modern tools and practices. It is written by award winning expert, providing guidance on the popular tools of the trade, including dual channel FFT analyzers, acoustic prediction programs, modern speaker arrays and digital signal processors. Color images and diagrams throughout aid understanding and clearly illustrate topics within the book.

Methley, Steve. 2009. Essentials of wireless mesh networking. Cambridge : Cambridge University Press.  
**004.68/M56**

Are you involved in implementing wireless mesh networks? As mesh networks move towards large-scale deployment, this highly practical book provides the information and insights you need. The technology is described, potential pitfalls in implementation are identified, clear hints and tips for success are provided, and real-world implementation examples are evaluated. Moreover, an introduction to wireless sensor networks (WSN) is included. This is an invaluable resource for electrical and communications engineers, software engineers, technology and information strategists in equipment, content and service providers, and spectrum regulators. It is also a useful guide for graduate students in wireless communications, and telecommunications.

NJATC. 2010. DC theory. Clifton Park, NY : Delmar Cengage Learning.  
**621.31912/D62**

Discover the fundamental direct current (DC) principles and applications, as well as the theories that underlie those principles - all in an effort to build a strong foundation in electrical technology! Written with the student electrician in mind, DC Theory, 3E uses a reader-friendly approach and begins with the basics of electricity and DC circuits, including how properties of materials are categorized within conductors, semiconductors, and insulators. Coverage gradually progresses to tackle more complex topics, like DC parallel circuits, DC combination circuits, magnetism and generators. With an emphasis on safety throughout, this book provides a valuable combination of both information and safe practice, providing students with the skills and knowledge necessary for future success in the electrical field.

Neamen, Donald A. 2010. 4<sup>th</sup> ed. Microelectronics circuit analysis and design. New York : McGraw-Hill.  
**621.3815/N26**

*Microelectronics: Circuit Analysis and Design* is intended as a core text in electronics for undergraduate electrical and computer engineering students. The fourth edition continues to provide a foundation for analyzing and designing both analog and digital electronic circuits. The goal has always been to make this book very readable and student friendly. An accessible approach to learning through clear writing and practical pedagogy has become the hallmark of *Microelectronics: Circuit Analysis and Design* by Donald Neamen. Now in its fourth edition, the text builds upon its strong pedagogy and tools for student assessment with key updates as well as revisions that allow for flexible coverage of op-amps.

Palamides, Alex . 2010. Signals and systems laboratory with MATLAB. Boca Raton : CRC Press.  
621.3822/P17

With its exhaustive coverage of relevant theory, **Signals and Systems Laboratory with MATLAB®** is a powerful resource that provides simple, detailed instructions on how to apply computer methods to signals and systems analysis. Written for laboratory work in a course on signals and systems, this book presents a corresponding MATLAB implementation for each theoretical concept introduced, making it a powerful learning tool for engineers, scientists, and students alike. MATLAB® code is used in problems and examples presented throughout the book. This code and other learning materials are available in a downloadable supplement. Due to the extensive—and truly unique—integration of MATLAB throughout this book, the authors provide a complete tutorial on use of the language for signals and systems analysis. With more than 5000 lines of MATLAB code and more than 700 figures embedded in the text, the material teaches readers how to program in MATLAB and study signals and systems concepts at the same time, giving them the tools to harness the power of computers to quickly assess problems and then visualize their solutions. Among its many useful features, this book: Offers complete coverage of the signals and systems theory, starting with elementary signals and concluding with state-space modeling; Contains more than 400 examples and chapter-end solved problems; Executes commands one-by-one at the MATLAB command prompt, and results, along with comments, are presented side-by-side in two- or three-column tables. Additional pedagogical features: A detailed MATLAB tutorial to introduce a beginner programmer to the language; Laboratory exercises that give students hands-on experience and help professors organize a course laboratory component; Presentation of continuous- and discrete-time in parallel fashion, effectively illustrating the similarities and differences between the two; Step-by-step examples that present data in tabular format and usually offer several different solutions to each problem.

Petruzella, Frank D. 2010. Electric motors and control systems. Boston : McGraw Hill Higher Education.  
621.46/P44

This book has been written for a course of study that will introduce the reader to a broad range of motor types and control systems. It provides an overview of electric motor operation, selection, installation, control and maintenance. Every effort has been made in this first edition text to present the most up-to-date information which reflects the current needs of the industry. The broad based approach taken makes this text viable for a variety of motors and control systems courses. Content is suitable for colleges, technical institutions, vocational/technical schools as well as apprenticeship and journeymen training. Electrical apprentices and journeymen will find this book to be invaluable due to Electrical Code references applicable to the installation of new control systems and motors, as well as information on maintenance and troubleshooting techniques. Personnel involved in the motor maintenance and repair will find this book to be a useful reference text. The text is comprehensive! It includes coverage of how motors operate in conjunction with their associated control circuitry. Both older and newer motor technologies are examined. Topics covered range from motor types and controls to installing and maintaining conventional controllers, electronic motor drives and programmable logic controllers.

Quaschnig, Volker. 2010. Renewable energy and climate change. Chichester : Wiley.  
363.73874/Q28

This dazzling introductory textbook encompasses the full range of today's important renewable energy technologies. Solar thermal, photovoltaic, wind, hydro, biomass and geothermal energy receive balanced treatment with one exciting and informative chapter devoted to each. As well as a complete overview of these state-of-the-art technologies, the chapters provide: clear analysis on their development potentials; an evaluation of the economic aspects involved; concrete guidance for practical implementation; how to reduce your own energy waste. If we do not act now to stop climate change, the consequences will be catastrophic. The current world situation is demonstrated here with the aid of full-colour figures and photographs, data diagrams and simple calculations and results. A multiplicity of impressive examples from countries across the globe show international 'alternative' energy in action. With its easy-to-read approach, this is an essential textbook for students on renewable energy courses, also environment and sustainability courses. Planners, operators, financiers and consultants will find this an excellent manual for planning and realizing climate protection. Furthermore, this book makes great background reading for energy workers, designers, politicians and journalists, and anyone who is interested in the topic of climate change.

Richharia, M. (Madhavendra). 2010. Satellite systems for personal applications: concepts and technology. Chichester : Wiley.  
621.3825/R39

This book presents a novel perspective on satellite systems, reflecting the modern personal technology context, and hence a focus on the individual as end-user. The book begins by outlining key generic concepts before discussing techniques adopted in particular application areas; next, it exemplifies these techniques through discussion of state-of-art current and emerging satellite systems. The book concludes by contemplating the likely evolution of these systems, taking into consideration influences and trends in technology, in conjunction with growing user expectations. In addition to addressing satellite systems that directly interact with personal devices, the book additionally considers those indirect applications where there is an increasing interest by individuals - notably, in remote sensing. As such, the book uniquely encompasses the entire gamut of satellite-enabled personal / end-user applications. *Key Features:* Broad scope - views satellite systems generically with



regards to their applicability across a wide range of personal application areas; Strong foundation in underlying concepts; State-of-the-art system examples; Review of trends in relevant areas of satellite technology; Revision questions at the end of each chapter. The book is suited to individuals, engineers, scientists, service providers, system operators, application developers and managers interested or involved in the use of satellite technology for personal applications. It should also hold interest for use in research institutes interested in promoting interdisciplinary cross-fertilization of ideas, as well as by financiers, policy makers, and strategists interested in gaining a better understanding of this technology.

Sarma, Mulukutla S. 2010. Electric machines. Singapore : Cengage Learning Asia.

**621.31042/Sa74**

Shina, Sammy G. 2008. Green electronics design and manufacturing: implementing lead-free and RoHS compliant global products. New York : McGraw-Hill.

**621.381/Sh63**

Successfully Design and Manufacture Reliable Environmentally-Friendly Electronic Products. This state-of-the-art resource brings together contributions by a team of experts from the total electronics supply chain who show how to master the strategy, design, test and implementation issues of meeting global environmental regulations. Edited by the founder of the New England Lead-Free Consortium and filled with over 130 detailed illustrations, *Green Electronics Design and Manufacturing* features: Guidance for lead-free conversions while maintaining quality and reliability for printed circuit board production and rework of surface mount technology and plated through holes; Restriction of hazardous substances (RoHS) compliance for hex-chrome and future halogen free issues; Detailed coverage of global environmental regulations and their impact on manufacturing and design processes; Techniques for managing corporate strategy and project design teams for green products; Proven methods for testing and analyzing green products; Proven methods for dealing with the adverse results of green production such as tin whiskers and finish interactions.

Smith, Cecil L. 2009. Practical process control: tuning and troubleshooting. Hoboken, N.J. : Wiley.

**670.4275/Sm51**

Practical Process Control (loop tuning and troubleshooting). This book differs from others on the market in several respects. First, the presentation is totally in the time domain (the word "LaPlace" is nowhere to be found). The focus of the book is actually troubleshooting, not tuning. If a controller is "tunable", the tuning procedure will be straightforward and uneventful. But if a loop is "untunable", difficulties will be experienced, usually early in the tuning effort. The nature of any difficulty provides valuable clues to what is rendering the loop "untunable". For example, if reducing the controller gain leads to increased oscillations, one should look for possible interaction with one or more other loops. Tuning difficulties are always symptoms of other problems; effective troubleshooting involves recognizing the clues, identifying the root cause of the problem, and making corrections. Furthermore, most loops are rendered "untunable" due to some aspect of the steady-state behavior of the process. Consequently, the book focuses more on the relationship of process control to steady-state process characteristics than to dynamic process characteristics. One prerequisite to effective troubleshooting is to "demystify" some of the characteristics of the PID control equations. One unique aspect of this book is that it explains in the time domain all aspects of the PID control equation (including as the difference between the parallel and series forms of the PID, the reset feedback form of the PID equation, reset windup protection, etc.) The book stresses an appropriate P&I (process and instrumentation) diagram as critical to successful tuning. If the P&I is not right, tuning difficulties are inevitable. Developing and analyzing P&I diagrams is a critical aspect of troubleshooting.

## INDUSTRIAL ENGINEERING AND RELATED SUBJECTS

Batton, John. 2010. 2<sup>nd</sup> ed. Work and organizational behaviour. Basingstoke : Palgrave Macmillan.

**302.35/W89**

Ever wondered what *really* motivates people, why bad decisions get made or what the latest blockbuster movie can tell you about leadership? Discover for yourself in this fascinating introduction to organizational behaviour. Written by leading experts, *Work and Organizational Behaviour* offers great value for money and has already helped thousands of students to develop the skills they need to succeed in their exams, not to mention preparing them for the world of work. The only book to offer a truly balanced and international approach, it ... - Brings the subject to life through case studies, vignettes and links to popular films; Sharpens your critical thinking skills and encourages you to debate; Uses superb illustrations to help you understand important ideas; Gives you a global perspective by including examples from across the world; Gives you FREE access to online learning resources to help you pass your exams, including self-test multiple choice questions, web links, chapter summaries, extra case studies, and lots of advice on essay writing and presentations.

Cao, Eduardo. 2010. Heat transfer in process engineering. New York : McGraw-Hill.  
**660.28427/C16**

Apply advanced heat transfer concepts to your chemical, petrochemical, and refining equipment designs using the detailed information contained in this comprehensive volume. Filled with valuable graphs, tables, and charts, *Heat Transfer in Process Engineering* covers the latest analytical and empirical methods for use with current industry software. Select heat transfer equipment, make better use of design software, calculate heat transfer coefficients, troubleshoot your heat transfer process, and comply with design and construction standards.

Dickerson, Charles. 2010. Architecture and principles of systems engineering. Boca Raton : CRC Press.  
**620.001171/D55**

A perpetual reassessment of concepts and practices is taking place across various systems disciplines at every level in the SE community. **Architecture and Principles of Systems Engineering** addresses these integral issues and prepares you for changes that will be occurring for years to come. With their simplified discussion of SE, the authors avoid an overly broad analysis of concepts and terminology. Applying their substantial experience in the academic, government, and commercial R&D sectors, this book is organized into detailed sections on: Foundations of Architecture and Systems Engineering; Modeling Languages, Frameworks, and Graphical Tools; Using Architecture Models in Systems Analysis and Design; Aerospace and Defense Systems Engineering. Describing ways to improve methods of reasoning and thinking about architecture and systems, the text integrates concepts, standards, and terminologies that embody emerging model-based approaches but remain rooted in the long-standing practices of engineering, science, and mathematics. With an emphasis on maintaining conceptual integrity in system design, this text describes succinct practical approaches that can be applied to the vast array of issues that readers must resolve on a regular basis. An exploration of the important questions above, this book presents the authors' invaluable experience and insights regarding the path to the future, based on what they have seen work through the power of model-based approaches to architecture and systems engineering.

Dunn, Patrick F. 2010. 2<sup>nd</sup> ed. Measurement and data analysis for engineering and science. Boca Raton, FL : CRC Press/Taylor & Francis.  
**530.8/D92**

Presenting the fundamental tools of experimentation that are currently used by engineers and scientists, **Measurement and Data Analysis for Engineering and Science, Second Edition** covers the basics of experimentation, hardware of experiments, and methods of data analysis. It also offers historical perspectives throughout. Updating and reorganizing its popular predecessor, this second edition makes the text much easier to follow and enhances the presentation with electronic material. Thorough and up to date, this edition continues to help students gain a fundamental understanding of the tools of experimentation. It discusses basic concepts related to experiments, measurement system components and responses, data analysis, and effective communication of experimental findings.

Garvey, Paul R. 2009. Analytical methods for risk management: a systems engineering perspective. Boca Raton : CRC Press.  
**620.004/G19**

*A Text on the Foundation Processes, Analytical Principles, and Implementation Practices of Engineering Risk Management*  
Drawing from the author's many years of hands-on experience in the field, **Analytical Methods for Risk Management: A Systems Engineering Perspective** presents the foundation processes and analytical practices for identifying, analyzing, measuring, and managing risk in traditional systems, systems-of-systems, and enterprise systems. *Balances Risk and Decision Theory with Case Studies and Exercises*. After an introduction to engineering risk management, the book covers the fundamental axioms and properties of probability as well as key aspects of decision analysis, such as preference theory and risk/utility functions. It concludes with a series of essays on major analytical topics, including how to identify, write, and represent risks; prioritize risks in terms of their potential impacts on a systems project; and monitor progress when mitigating a risk's potential adverse effects. The author also examines technical performance measures and how they can combine into an index to track an engineering system's overall performance risk. In addition, he discusses risk management in the context of engineering complex, large-scale enterprise systems. *Applies Various Methods to Risk Engineering and Analysis Problems*. This practical guide enables an understanding of which processes and analytical techniques are valid and how they are best applied to specific systems engineering environments. After reading this book, you will be on your way to managing risk on both traditional and advanced engineering systems.

Jain, Ravi. 2010. 3<sup>rd</sup> ed. Managing research, development and innovation: managing the unmanageable. Hoboken, N.J. : Wiley.  
**658.57/J19**

As the economy shifts from producing goods to producing information, the role of researchers in shaping the future has become immense. By taking advantage of modern technology, the highly trained and predominantly autonomous researchers from around the globe collect and share information better than ever—yet, there is still a lack of an effective centralized structure for an R&D organization manager to integrate the efforts from many disparate individuals into a unified plan. *Managing Research, Development, and Innovation, Third Edition* covers the management skills and leadership theories essential to generating products and excelling in today's global economy. Topics of interest include how to design jobs, organize hierarchies, resolve conflicts, motivate employees, and create an innovative work environment. Discover how superior management skills can increase funding, generate profit, and improve the effectiveness of technologically based organizations. This new revised edition: Covers all aspects of the research and development process—with focus on the human management function; Includes two new chapters covering the innovation process critical to research and development of new products and services; Outlines the challenging issues related to diversity in science and technology organizations and provides insights as to how diversity can be used to enhance creativity. *Managing Research, Development, and Innovation, Third Edition* is the most complete, insightful book of its kind. Useful for professionals and graduate students alike, the text demonstrates in clear, straightforward prose how good management skills will shape the future.

Martin, Mike. 2010. 2<sup>nd</sup> ed. Introduction to engineering ethics. Boston : McGraw-Hill Higher Education.  
**174.962/M36**

*Introduction to Engineering Ethics* provides the background for discussion of the basic issues in engineering ethics. Emphasis is given to the moral problems engineers face in the corporate setting. It places those issues within a philosophical framework, and it seeks to exhibit their social importance and intellectual challenge. The primary goal is to stimulate critical and responsible reflection on moral issues surrounding engineering practice and to provide the conceptual tools necessary for pursuing those issues. Students preparing to function within the engineering profession need to be introduced to the basic issues in engineering ethics.

Ott, Lyman. 2010. 6<sup>th</sup> ed. An introduction to statistical methods and Data Analysis. Australia : Brooks/Cole Cengage Learning.  
**519.5/Ot81**

Ott and Longnecker's AN INTRODUCTION TO STATISTICAL METHODS AND DATA ANALYSIS, Sixth Edition, provides a broad overview of statistical methods for advanced undergraduate and graduate students from a variety of disciplines who have little or no prior course work in statistics. The authors teach students to solve problems encountered in research projects, to make decisions based on data in general settings both within and beyond the university setting, and to become critical readers of statistical analyses in research papers and in news reports. The first eleven chapters present material typically covered in an introductory statistics course, as well as case studies and examples that are often encountered in undergraduate capstone courses. The remaining chapters cover regression modeling and design of experiments.

Rainer, R. Kelly. 2011. 3<sup>rd</sup> ed. Introduction to information systems. Hoboken, N.J. : Wiley.  
**004/R13**

Information technology professionals will gain invaluable information with this updated resource on how to connect concepts to key business areas. These areas include accounting, finance, marketing, management, human resources, and operations. The new edition provides concise and accessible coverage of core IT topics. *Do It Yourself* activities show them how to apply the information on the job. Technology professionals will then be able to discover how critical IT is to each functional area and every business.

Reid, R. Dan (Robert Dan). 2010. 4<sup>th</sup> ed., Int'l student version. Operations management: an integrated approach. Hoboken, NJ : John Wiley.  
**658.2/R27**

With its abundance of step-by-step solved problems, concepts, and examples of major real-world companies, this text brings unparalleled clarity and transparency to the course. In the new *Fourth Edition*, all aspects of operations management are explained—its critical impact in today's business environments, its relation to every department in an organization, and the importance of an integrated supply chain focus. Quantitative and qualitative topics are balanced, and students are guided through the coursework that will help lay the foundations for their future careers.

Scott, Patricia A. ed. 2009. Ergonomics in developing regions: needs and applications. Boca Raton : CRC Press.  
**620.82091724/Er38**

The book highlights the plight of millions of laborers and the poor working conditions pertaining to industrially less developed countries where the working environment mirrors the socio-economic deprivation of the people. Woven throughout the 34 chapters of this book is the tenet that good ergonomics is good economics. The chapters include examples of low-cost interventions at the work place in IDCs. The contributors discuss the ripple effect of ergonomics beyond the workplace to the betterment of life in general for the huge workforce in IDCs around the world. They focus on work-site problems and ergonomic solutions in developing regions around the globe, covering work conducted in Asia, Africa, South America, Russia, and China. Examining the factors unique to IDCs, leading ergonomists provide insights as to how sustainable progress is achievable in the developing world. They demonstrate the need for a more inclusive macro approach, citing managerial input essential for sustainable progress. With a panel of authors that reflects the multidisciplinary nature of the field, this book chronicles the nuances of differences in aim, practice, and outcome when ergonomists tackle Developing World problems from a Developing World perspective

Seider, Warren D. 2010. 3<sup>rd</sup> ed. Int'l student version. Product and process design principles: synthesis, analysis and design. Hoboken, NJ : Wiley.  
**660/P94**

Armed with this book, chemical engineers will have a collection of modern strategies for the design of chemical products and processes. It emphasizes a systematic approach and integrates product design more thoroughly throughout the chapters. New case studies on process design are included to make the concepts more relevant. The social aspects and economics of product design are introduced, and the Stage-Gate Product Development Process is explored in parallel tracks for several chemical products. The accompanying CD-ROM also provides chemical engineers with numerous examples of the simulator input and output, with frame-by-frame instructions to discuss the nature of the models provided for the processing units.

Stanga, Mario. 2010. Sanitation: cleaning and disinfection in the food industry. Weinheim : Wiley-VCH ; Chichester : John Wiley [distributor].  
**664/St24**

Finally, an up-to-date guide to cleaning and disinfection for the food preparation and processing industries. It discusses a host of examples from various food industries as well as topics universal to many industries, including biofilm formation, general sanitizing, and clean-in-place systems. Equally, the principles related to contamination, cleaning compounds, sanitizers and cleaning equipment are addressed. As a result, concepts of applied detergency are developed in order to understand and solve problems related to the cleaning and disinfection of laboratories, plants and other industrial environments where foods and beverages are prepared. Essential reading for food industry personnel.

Summers, Donna C. 2010. 5<sup>th</sup> ed. Quality. Boston : Prentice Hall, c2010.  
**658.562 Su64**

Filled with a wide-range of industry examples, this book takes an applied approach that teaches the “why and how” behind quality assurance and statistical process control. Each chapter includes abundant case studies that show how quality tools and techniques can be combined to resolve real customer issues. This edition offers a more global view and includes at least one service industry example per chapter. Expanded treatment is also given to multi-vari analysis and failure modes and effects analysis. With its combination of clear techniques and real-world illustrations, it shows explicitly how quality tools can be used to improve outputs, productivity, costs and safety. For people who apply quality assurance tools and techniques to their day-to-day work activities.

Wise, John A. 2010. 2<sup>nd</sup> ed. Handbook of aviation human factors. Boca Raton : CRC Press.  
**629.13/H19**

The application of human factors to aviation has come of age and is thriving, so much so that its influence has spread to other applications. Keeping pace with the field during the decade since its initial publication, the **Handbook of Aviation Human Factors** has also continued to evolve. Completely revised and updated, the second edition of this groundbreaking resource includes: New chapters on resilience, uninhabited aerial vehicles, and aesthetics; Significant revisions and expansions to every chapter; New contributing co-authors who bring new perspectives; Human factors achievements and current trends. The handbook also explores the history of aviation human factors, current R&D

focus, basic research issues, organizational factors, personnel selection, ATC and ATM relevant issues, weather systems, team and individual performance, fatigue, situation awareness, training, and forensics. It boasts contributors from six countries on three continents with backgrounds in academia, industry, government-based research, development organizations, and international aviation organizations as well as practicing engineers. The demand for aviation continues to expand and aviation must respond to that demand. The safety culture of aviation imposes a need, in advance of change, for sound evidence that the expected benefits of said change will accrue, without hidden hazards to safety and without new and unexpected sources of human error. The multidisciplinary, international scope of this book provides the skills required not only to interpret and generalize findings, but also to translate them into real solutions and safety benefits.

White, John A. 2010. Principles of engineering economic analysis. Hoboken, NJ : Wiley.  
**658.155/W58**

This concise book provides engineers with the tools to evaluate the cost of their work and convey the project to key decision makers. It follows an integrative approach that arms them with a seven-step Systematic Evaluation and Analysis Technique as well as a strong understanding of cash flows. The new fifth edition has also been expanded from eight to 16 chapters, covering critical topics such as time value of money, measures of worth, depreciation, inflation, and capital rationing. Practicing engineers will be able to apply these principles and techniques to make the most effective economic decisions.

Younis, Wasim. 2009. Up and running with autodesk inventor simulation 2010: a step-by-step guide to engineering design solutions. Amsterdam : Butterworth-Heinemann/Elsevier.  
**620.00420285536/Y88**

The book begins with an overview of dynamic simulation, stress analysis and the Inventor Simulation's interface and features so that users are well-grounded in core concepts and the software's strengths, weaknesses, and workarounds. The author then presents various design problems: evaluating the pistons and reducing the weight of a connecting rod in an engine, testing the load on a spring, designing a cam shaft, ensuring parts in a folding ramp can bear the required load, and walks the reader step-by-step through the solution. The design problems presented cover all core aspects and capabilities of dynamic simulation and stress analysis, and their solutions are universal, so readers will be able to apply the crucial lessons learned in order to quickly solve their own design problems. Supporting software showcases the book's interesting data sets, so readers can follow along sequentially in the Inventor environment, or reuse and adapt models for their own projects.

Zio, Enrico. 2009. Computational methods for reliability and risk analysis. Hackensack, NJ : World Scientific.  
**620.0042/Z67**

This book illustrates a number of modelling and computational techniques for addressing relevant issues in reliability and risk analysis. In particular, it provides: i) a basic illustration of some methods used in reliability and risk analysis for modelling the stochastic failure and repair behaviour of systems, e.g. the Markov and Monte Carlo simulation methods; ii) an introduction to Genetic Algorithms, tailored to their application for RAMS (Reliability, Availability, Maintainability and Safety) optimization; iii) an introduction to key issues of system reliability and risk analysis, like dependent failures and importance measures; and iv) a presentation of the issue of uncertainty and of the techniques of sensitivity and uncertainty analysis used in support of reliability and risk analysis. The book provides a technical basis for senior undergraduate or graduate courses and a reference for researchers and practitioners in the field of reliability and risk analysis. Several practical examples are included to demonstrate the application of the concepts and techniques in practice.

## **MECHANICAL ENGINEERING AND RELATED SUBJECTS**

Dinçer, Ibrahim. 2010. 2<sup>nd</sup> ed. Refrigeration systems and applications. Chichester, West Sussex : Wiley.  
**621.56/D61**

*Refrigeration Systems and Applications, 2<sup>nd</sup> edition* offers a comprehensive treatise that addresses real-life technical and operational problems, enabling the reader to gain an understanding of the fundamental principles and the practical applications of refrigeration technology. New and unique analysis techniques (including energy as a potential tool), models, correlations, procedures and applications are covered, and recent developments in the field are included - many of which are taken from the author's own research activities in this area. The book also includes some discussion of global warming issues and its potential solutions. Enables the reader to gain an understanding of the fundamental principles and the practical applications of refrigeration technologies. Discusses crucial industrial technical and operational problems, as well as new performance improvement techniques and tools for better design and analysis. Includes fundamental aspects of thermodynamics, fluid flow, and heat transfer; refrigerants; refrigeration cycles and systems; advanced refrigeration cycles and systems, including some novel applications; heat pumps; heat pipes; and many more. Provides easy to follow explanations, numerous new chapter-end

problems and worked-out examples as learning aids for students and instructors. Refrigeration is extensively used in a variety of thermal engineering applications ranging from the cooling of electronic devices to food cooling processes. Its wide-ranging implications and applications mean that this industry plays a key role in national and international economies, and it continues to be an area of active research and development. *Refrigeration Systems and Applications, 2<sup>nd</sup> edition* forms a useful reference source for graduate and postgraduate students and researchers in academia and as well as practicing engineers working in this important field who are interested in refrigeration systems and applications and the methods and analysis tools for their analysis, design and performance improvement.

Pytel, Andrew. 2010. 3<sup>rd</sup> SI ed. Engineering mechanics: statics. Stamford, Conn : Cengage Learning.  
**620.103/P99**

Ullman, David. 2010. 4<sup>th</sup> ed. The mechanical design process. Boston : McGraw-Hill Higher Education.  
**621.815/UI42**

The fourth edition of *The Mechanical Design Process* combines a practical overview of the design process with case material and real-life engineering insights. Ullman's work as an innovative designer comes through consistently, and has made this book a favorite with readers. This book conveys the "flavor" of design, addressing both traditional engineering topics as well as real-world issues like creative thinking, synthesis of ideas, visualization, teamwork, sense of customer needs and product success factors, and the financial aspects of design alternatives, in a practical and motivating manner. New in this edition are examples from industry and over twenty online templates that help students prepare complete and consistent assignments while learnign the material. This text is appropriate primarily for the Senior Design course taken by mechanical engineering students, though it can also be used in design courses offered earlier in the curriculum. Working engineers also find it to be a readable, practical overview of the modern design process.

## GENERAL ENGINEERING

Browne, Michael. 2010. 2<sup>nd</sup> ed. Schaum's outline of physics for engineering and science. York : McGraw-Hill.  
**530/B81**

Fortunately for you, there's Schaum's Outlines. More than 40 million students have trusted Schaum's to help them succeed in the classroom and on exams. Schaum's is the key to faster learning and higher grades in every subject. Each Outline presents all the essential course information in an easy-to-follow, topic-by-topic format. You also get hundreds of examples, solved problems, and practice exercises to test your skills. This Schaum's Outline gives you: Practice problems with full explanations that reinforce knowledge; Coverage of the most up-to-date developments in your course field; In-depth review of practices and applications.

Budinski, Kenneth G. 2010. 9<sup>th</sup> ed. Engineering materials: properties and selection. Upper Saddle River, N.J. : Prentice Hall.  
**620.11/B85**

The father-son authoring duo of Kenneth G. Budinski and Michael K. Budinski brings nearly 70 years of combined industry experience to bear in this practical, reader-friendly introduction to engineering materials. This text covers theory and industry-standard selection practices, providing students with the working knowledge to make an informed selection of materials for engineering applications and to correctly specify materials on drawings and purchasing documents. Encompassing all significant material systems—metals, ceramics, plastics, and composites—this text incorporates the most up-to-date information on material usage and availability, addresses the increasingly global nature of the field, and reflects the suggestions of numerous adopters of previous editions. For undergraduate courses in Metallurgy and Materials Science.

Gere, James M. 2009. 7<sup>th</sup> SI ed. Mechanics of materials. Australia : Cengage Learning.  
**620.1123/G31**

Now in 4-color format with more illustrations than ever before, the Seventh Edition of Mechanics of Materials continues its tradition as one of the leading texts on the market. With its hallmark clarity and accuracy, this text develops student understanding along with analytical and problem-solving skills. The main topics include analysis and design of structural members subjected to tension, compression, torsion, bending, and more. The book includes more material than can be taught in a single course giving instructors the opportunity to select the topics they wish to cover while leaving any remaining material as a valuable student reference.

Scheaffer, Richard L. 2009. Introduction to probability and its applications. Boston, MA :  
Cengage Learning Arts and Sciences.  
**519.2/Sch21**

This text focuses on the utility of probability in solving real-world problems for students in a one-semester calculus-based probability course. Theory is developed to a practical degree and grounded in discussion of its practical uses in solving real-world problems. Numerous applications using up-to-date real data in engineering and the life, social, and physical sciences illustrate and motivate the many ways probability affects our lives. The text's accessible presentation carefully progresses from routine to more difficult problems to suit students of different backgrounds, and carefully explains how and where to apply methods. Students going on to more advanced courses in probability and statistics will gain a solid background in fundamental concepts and theory, while students who must apply probability to their courses engineering and the sciences will develop a working knowledge of the subject and appreciation of its practical power.

Stanfield, Carter. 2010. Fundamentals of HVAC/R. Upper Saddle River, N.J. : Prentice Hall.  
**697/St24**

Created with a clear-cut vision of what trainees need, **Fundamentals of HVAC/R** provides comprehensive coverage of heating, ventilating, air conditioning, and refrigeration (HVACR) topics. This new reader-friendly book offers fundamental concepts, the most current trends, and practical applications in the field. With simple language, skillfully presented concepts, carefully selected artwork, and the right amount of detail, this book is everything trainees need to know to install, service, and maintain HVACR systems.

Vining, G. Geoffrey. 2011. 3<sup>rd</sup> ed. Statistical methods for engineers. Boston, Mass. :  
Cengage Learning.  
**620.0015195/V76**

STATISTICAL METHODS FOR ENGINEERS offers a balanced, streamlined one-semester introduction to Engineering Statistics that emphasizes the statistical tools most needed by practicing engineers. Using real engineering problems with real data based on actual journals and consulting experience in the field, students see how statistics fits within the methods of engineering problem solving. The text teaches students how to think like an engineer at analyzing real data and planning a project the same way they will in their careers. Case studies simulate problems students will encounter professionally and tackle on long-term job projects. The presentation makes extensive use of graphical analysis, and use of statistical software is encouraged for problem-solving to illustrate how engineers rely on computers for data analysis. The authors relate their own extensive professional experience as engineers in short margin notes called Voice of Experience that lend valuable context to how students will apply concepts in the field and why they're important to learn. And a rich companion website provides hours of multimedia lecture presentation narrated by the authors to show the material related live by different voices, simulating how students will listen and learn from multiple colleagues in their jobs.



UNIVERSITY OF SAN CARLOS  
The Library System  
Engineering Library

LOAN/RESERVATION REQUEST FORM

AUTHOR : \_\_\_\_\_  
TITLE : \_\_\_\_\_  
CALL NO. : \_\_\_\_\_  
BORROWER'S NAME: \_\_\_\_\_  
DEPARTMENT : \_\_\_\_\_  
DATE NEEDED : \_\_\_\_\_  
RECEIVED & HANDLED BY: \_\_\_\_\_

\*\*\*\*\*

***PUBLICATION CREDITS***

*Cristita Largo-Lantiose*

Engineering Librarian

*Judy Luceñara*

Work Scholar

For inquiries

Call: 2 300 100 local 119

Email: clarlan@yahoo.com