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Practical Power Distribution for Industry Jan De Kock 2004-07-16 The book provides technical know-how not covered by most universities and colleges in a subject that is central to the roles of many electrical engineers in Handbook of Maintenance Management and Engineering Mohamed Ben-Daya 2009-07-30 To be able to compete successfully both at national and international levels, production systems and equipment must perform at levels industry, focusing on switchgear, power cables, power factor correction, and network studies. * Learn how to install and maintain electrical power equipment in industrial settings * Select and specify the right power system at the right price * Provides the practical essentials for reliable operation of industrial electrical networks - covering switchgear, cabling and power correction factors not even thinkable a decade ago. Requirements for increased product quality, reduced throughput time and enhanced operating effectiveness within a rapidly changing customer demand environment continue to demand a high maintenance performance. In some cases, maintenance is required to increase operational effectiveness and revenues and customer satisfaction while reducing capital, operating and support costs. This may be the largest *Pyomo – Optimization Modeling in Python* William E. Hart 2012-02-15 This book provides a complete and comprehensive reference/guide to Pyomo (Python Optimization Modeling Objects) for both beginning and advanced challenge facing production enterprises these days. For this, maintenance strategy is required to be aligned with the production logistics and also to keep updated with the current best practices. Maintenance has become a modelers, including students at the undergraduate and graduate levels, academic researchers, and practitioners. The text illustrates the breadth of the modeling and analysis capabilities that are supported by the software and multidisciplinary activity and one may come across situations in which maintenance is the responsibility of people whose training is not engineering. This handbook aims to assist at different levels of understanding whether support of complex real-world applications. Pyomo is an open source software package for formulating and solving large-scale optimization and operations research problems. The text begins with a tutorial on simple linear and the manager is an engineer, a production manager, an experienced maintenance practitioner or a beginner. Topics selected to be included in this handbook cover a wide range of issues in the area of maintenance management integer programming models. A detailed reference of Pyomo's modeling components is illustrated with extensive examples, including a discussion of how to load data from data sources like spreadsheets and databases. and engineering to cater for all those interested in maintenance whether practitioners or researchers. This handbook is divided into 6 parts and contains 26 chapters covering a wide range of topics related to maintenance Chapters describing advanced modeling capabilities for nonlinear and stochastic optimization are also included. The Pyomo software provides familiar modeling features within Python, a powerful dynamic programming management and engineering. language that has a very clear, readable syntax and intuitive object orientation. Pyomo includes Python classes for defining sparse sets, parameters, and variables, which can be used to formulate algebraic expressions that define objectives and constraints. Moreover, Pyomo can be used from a command-line interface and within Python's interactive command environment, which makes it easy to create Pyomo models, apply a variety of optimizers, and examine solutions. The software supports a different modeling approach than commercial AML (Algebraic Modeling Languages) tools, and is designed for flexibility, extensibility, portability, and maintainability but also maintains the central ideas in modern AMLs.

MECHATRONICS: INTEGRATED MECHANICAL ELECTRONIC SYSTEMS (With CD) K.P. Ramachandran 2008-01-01 Market Desc: This textbook is written for undergraduate students embarking on introductory course in Mechatronics and is also a reference book for engineers, and other practicing professionals, who are keen on understanding the principles of Mechatronic systems and engineering. Special Features: • Text presented in an integrated and lucid style. Design of discrete control systems using fluid power circuits and PLCs explained. User-friendly book with simple explanations and illustrations. Many worked out examples and case studies. Numerous illustrations, review questions, problems and exercises given. Appendices, solved question and answers included in companion CD. Instructor Manual CD with Powerpoint presentations and questionnaire to be made available in December 2008. About The Book: This book integrates the principles of electrical and electronic engineering with Mechatronic system application in a simple manner, and is designed for both mechanical/industrial engineers. This book enables one to design and select analog and digital circuits, microprocessor-based components, mechanical devices, sensors and actuators, and control devices to design modern mechatronic systems. Mechatronics - Integrated Mechanical Electronic System, consists of 16 chapters and each chapter begins with learning objectives and a brief introduction. Topics are then divided into labeled sections with explanations, examples, along with appropriate practical applications. A variety of solved problems with step by step solutions are included. Each chapter ends with key terms, summary of the chapter, objective type guestions and exercises.

Measuring Sustainable Development and Green Investments in Contemporary Economies Mieila, Mihai 2017-01-05 Sustainability is becoming an increasingly urgent factor in all areas of life, and its effect on contemporary economies can be vast. Sustainable development can truly propel modern economies forward, and it is important to study the impacts of such progress. Measuring Sustainable Development and Green Investments in Contemporary Economies provides an authoritative look at how green investments are shaping global economies. Highlighting emerging topics such as socio-economic systems, green performance strategies, forest ecosystems, and food security, this is a detailed reference resource for all practitioners, academicians, graduate students, and researchers interested in discovering more about the impact of sustainable development on modern economies.

Engineering Metrology and Measurements Raghavendra, 2013-05 Engineering Metrology and Measurements is a textbook designed for students of mechanical, production and allied disciplines to facilitate learning of various shop-floor measurement techniques and also understand the basics of mechanical measurements.

Practical Centrifugal Pumps Paresh Girdhar 2011-04-18 Practical Centrifugal Pumps is a comprehensive guide to pump construction, application, operation, maintenance and management issues. Coverage includes pump classifications, types and criteria for selection, as well as practical information on the use of pumps, such as how to read pump curves and cross reference. Throughout the book the focus is on best practice and developing the skills and knowledge required to recognise and solve pump problems in a structured and confident manner. Case studies provide real-world scenarios covering the design, set up, troubleshooting and maintenance of pumps. · A comprehensive guide to pump construction, design, installation, operation, troubleshooting and maintenance. · Develop real-world knowhow and practical skills through seven real-world case studies · Coverage includes pump classifications, types and criteria for selection, as well as practical information on the use of pumps

Software Engineering in the Era of Cloud Computing Muthu Ramachandran 2020-01-01 This book focuses on the development and implementation of cloud-based, complex software that allows parallelism, fast processing, and Static Analysis Antoine Mine 2012-08-30 This book constitutes the thoroughly refereed proceedings of the 19th International Symposium on Static Analysis, SAS 2012, held in Deauville, France, in September 2012. The 25 real-time connectivity. Software engineering (SE) is the design, development, testing, and implementation of software applications, and this discipline is as well developed as the practice is well established whereas the Cloud revised full papers presented together with 4 invited talks were selected from 62 submissions. The papers address all aspects of static analysis, including abstract domains, abstract interpretation, abstract testing, bug Software Engineering (CSE) is the design, development, testing, and continuous delivery of service-oriented software systems and applications (Software as a Service Paradigm). However, with the emergence of the highly detection, data flow analysis, model checking, new applications, program transformation, program verification, security analysis, theoretical frameworks, and type checking. attractive cloud computing (CC) paradigm, the tools and techniques for SE are changing. CC provides the latest software development environments and the necessary platforms relatively easily and inexpensively. It also Practical Grounding, Bonding, Shielding and Surge Protection G Vijayaraghavan 2004-07-21 This book will allow you to gain practical skills and know-how in grounding, bonding, lightning & surge protection. Few topics allows the provision of software applications equally easily and on a pay-as-you-go basis. Business requirements for the use of software are also changing and there is a need for applications in big data analytics, parallel generate as much controversy and argument as that of grounding and the associated topics of surge protection, shielding and lightning protection of electrical and electronic systems. Poor grounding practice can be the cause computing, AI, natural language processing, and biometrics, etc. These require huge amounts of computing power and sophisticated data management mechanisms, as well as device connectivity for Internet of Things (IoT) of continual and intermittent difficult-to-diagnose problems in a facility. This book looks at these issues from a fresh yet practical perspective and enables you to reduce expensive downtime on your plant and equipment to a environments. In terms of hardware, software, communication, and storage, CC is highly attractive for developing complex software that is rapidly becoming essential for all sectors of life, including commerce, health, minimum by correct application of these principles. Learning outcomes: * Apply the various methods of grounding electrical systems * Detail the applicable national Standards * Describe the purposes of grounding and bonding education, and transportation. The book fills a gap in the SE literature by providing scientific contributions from researchers and practitioners, focusing on frameworks, methodologies, applications, benefits and inherent * List the types of systems that cannot be grounded * Describe what systems can be operated ungrounded * Correctly shield sensitive communications cables from noise and interference * Apply practical knowledge of surge challenges/barriers to engineering software using the CC paradigm. and transient protection * Troubleshoot and fix grounding and surge problems * Design, install and test an effective grounding system for electronic equipment * Understand lightning and how to minimize its impact on your Lubrication Engineering 1993 those which are based on relevant conceptual and formal development. The coverage is wide, ranging from machine learning to the use of data on the Semantic Web, with many new topics. The contributions are concerned with machine learning, big data, data processing in medicine, similarity processing in ontologies, semantic image analysis, as well as many applications including the use of machine leaning techniques for cloud security, artificial intelligence techniques for detecting COVID-19, the Internet of things, etc. The book is meant to be a very important and useful source of information for researchers and doctoral students in data analysis, Semantic Web, big data, machine learning, computer engineering and related disciplines, as well as for postgraduate students who want to integrate the doctoral cycle.

facility * Protect sensitive equipment from lightning · An engineer's guide to earthing, shielding, lightning and surge protection designed to deliver reliable equipment and communications systems that comply with Intelligent Systems in Big Data, Semantic Web and Machine Learning Noreddine Gherabi 2021-05-28 This book describes important methodologies, tools and techniques from the fields of artificial intelligence, basically international and national codes · Discover how to reduce plant downtime and intermittent faults by implementing best-practice grounding/earthing techniques · Learn the principles of cable shielding in communication networks **Commerce America** 1977-05-23 Power Generation, Operation, and Control Allen J. Wood 2012-11-07 A comprehensive text on the operation and control of power generation and transmission systems In the ten years since Allen J. Wood and Bruce F. Wollenberg presented their comprehensive introduction to the engineering and economic factors involved in operating and controlling power generation systems in electric utilities, the electric power industry has undergone Automobile Mechanical and Electrical Systems Tom Denton 2017-08-25 The second edition of Automobile Mechanical and Electrical Systems concentrates on core technologies to provide the essential information required to unprecedented change. Deregulation, open access to transmission systems, and the birth of independent power producers have altered the structure of the industry, while technological advances have created a host of new understand how different vehicle systems work. It gives a complete overview of the components and workings of a vehicle from the engine through to the chassis and electronics. It also explains the necessary tools and opportunities and challenges. In Power Generation, Operation, and Control, Second Edition, Wood and Wollenberg bring professionals and students alike up to date on the nuts and bolts of the field. Continuing in the tradition equipment needed in effective car maintenance and repair, and relevant safety procedures are included throughout. Designed to make learning easier, this book contains: Photographs, flow charts and guick reference tables of the first edition, they offer a practical, hands-on guide to theoretical developments and to the application of advanced operations research methods to realistic electric power engineering problems. This one-of-a-kind text Detailed diagrams and clear descriptions that simplify the more complicated topics and aid revision Useful features throughout, including definitions, key facts and 'safety first' considerations. In full colour and with support also addresses the interaction between human and economic factors to prepare readers to make real-world decisions that go beyond the limits of mere technical calculations. The Second Edition features vital new material, materials from the author's website (www.automotive-technology.org), this is the guide no student enrolled on an automotive maintenance and repair course should be without. including: * A computer disk developed by the authors to help readers solve complicated problems * Examination of Optimal Power Flow (OPF) * Treatment of unit commitment expanded to incorporate the Lagrange relaxation Greenhouse Gases Bernardo Llamas 2016-03-30 Sustainability should be a key component of every process, safeguarding resources and reserves for future generations. This book shows how a responsible use of resources is technique * Introduction to the use of bounding techniques and other contingency selection methods * Applications suited to the new, deregulated systems as well as to the traditional, vertically organized utilities company possible, offering valid technological alternatives to fight climate change. We offer current technologies and valid methods for a wide range of activities: teaching, investigation, work, business and even daily life. We encourage Wood and Wollenberg draw upon nearly 30 years of classroom testing to provide valuable data on operations research, state estimation methods, fuel scheduling techniques, and more. Designed for clarity and ease of use, this all our readers to join us and become part of the solution to climate change, rather than the problem. After reading this book, we are certain that you will find justified reasons to start your own personal and social awareness campaign in favour of these effective technologies against climate change. invaluable reference prepares industry professionals and students to meet the future challenges of power generation, operation, and control.

eMaintenance Diego Galar 2017-06-15 eMaintenance: Essential Electronic Tools for Efficiency enables the reader to improve efficiency of operations, maintenance staff, infrastructure managers and system integrators, by accessing a real time computerized system from data to decision. In recent years, the exciting possibilities of eMaintenance have become increasingly recognized as a source of productivity improvement in industry. The seamless linking of systems and equipment to control centres for real time reconfiguring is improving efficiency, reliability, and sustainability in a variety of settings. The book provides an introduction to collecting and processing data from machinery, explains the methods of overcoming the challenges of data collection and processing, and presents tools for data driven condition monitoring and decision making. This is a groundbreaking handbook for those interested in the possibilities of running a plant as a smart asset. Provides an introduction to collecting and processing data from machinery Explains how to use sensor-based tools to increase efficiency of diagnosis, prognosis, and decision-making in maintenance Describes methods for overcoming the challenges of data collection and processing A HEAT TRANSFER TEXTBOOK John H. Lienhard 2004

Practical Machinery Vibration Analysis and Predictive Maintenance Cornelius Scheffer 2004-07-16 Machinery Vibration Analysis and Predictive Maintenance provides a detailed examination of the detection, location and diagnosis of faults in rotating and reciprocating machinery using vibration analysis. The basics and underlying physics of vibration signals are first examined. The acquisition and processing of signals is then reviewed followed by a discussion of machinery fault diagnosis using vibration analysis. Hereafter the important issue of rectifying faults that have been identified using vibration analysis is covered. The book also covers the other techniques of predictive maintenance such as oil and particle analysis, ultrasound and infrared thermography. The latest approaches and equipment used together with the latest techniques in vibration analysis emerging from current research are also highlighted. Understand the basics of vibration measurement Apply vibration analysis for different machinery faults Diagnose machinery-related problems with vibration analysis techniques Handbook of Industry 4.0 and SMART Systems Diego Galar Pascual 2019-10-01 Industry 4.0 refers to fourth generation of industrial activity characterized by smart systems and internet-based solutions. This book describes the fourth revolution based on instrumented, interconnected and intelligent assets. The different book chapters provide a perspective on technologies and methodologies developed and deployed leading to this concept. With an aim to increase performance, productivity and flexibility, major application area of maintenance through smart system has been discussed in detail. Applicability of 4.0 in transportation, energy and infrastructure is explored, with effects on technology, organisation and operations from a systems perspective.

Proceedings of the 2nd International Conference on Data Engineering and Communication Technology Anand J. Kulkarni 2018-10-03 This book features research work presented at the 2nd International Conference on Data Engineering and Communication Technology (ICDECT) held on December 15-16, 2017 at Symbiosis International University, Pune, Maharashtra, India. It discusses advanced, multi-disciplinary research into smart computing, information systems and electronic systems, focusing on innovation paradigms in system knowledge, intelligence and sustainability that can be applied to provide feasible solutions to varied problems in society, the environment and industry. It also addresses the deployment of emerging computational and knowledge transfer approaches, optimizing solutions in a variety of disciplines of computer science and electronics engineering. Monthly Catalog of United States Government Publications 1993

Software Engineering for Modern Web Applications: Methodologies and Technologies Brandon, Daniel M. 2008-06-30 "This book presents current, effective software engineering methods for the design and development of modern Web-based applications"--Provided by publisher.

this text presents the fundamental information required to deliver an effective TES solution/strategy and identification of core technologies. The book contains reference and discussion relative to automotive. rail, and several Knowledge-Driven Work Joel Cutcher-Gershenfeld 1998-09-10 Knowledge-Driven Work is a pioneering study of the cross-cultural iffusion of ideas about the organization of work. These ideas, linked with the knowledge of the workforce, are rapidly becoming the primary source of competitive advantage in the world economy. The book provides an in-depth look at eight Japanese-affiliated manufacturing facilities operating in the United States, other industrial case studies to highlight the potential of TES to redefine the product creation and development process. Additionally the role of warranty and service data in the product creation and delivery system is also combined with examinations of their sister facilities in Japan. The authors offer their insights into the complex process by which elements of work systems in one country interact with those in another. They trace the flow of introduced. This book offers a valuable reference resource for academics, practitioners and students of TES and the associated supporting technologies and business models that underpin whole-life product creation and ideas from Japan to the US and other nations, and the beginnings of a reverse diffusion of innovation back to Japan. The authors organize their findings into six categories: the cross-cultural diffusion of work practices, teamdelivery systems through the harvesting and application of condition and use based data. based work systems, kaizen and employee involvement, employment security, human resource management, and labor-management relations. Their study of team-based work systems yields a taxonomy of teams and reveals Emerging Trends in Mechanical Engineering L. Vijayaraghavan 2019-12-11 This book comprises select proceedings of the International Conference on Emerging Trends in Mechanical Engineering (ICETME 2018). The some conflicts between the desire for self-management and the existence of interdependencies. Investigations into kaizen (ongoing incremental improvement) indicate that its emphasis on employee-driven, systematic problem book covers various topics of mechanical engineering like computational fluid dynamics, heat transfer, machine dynamics, tribology, and composite materials. In addition, relevant studies in the allied fields of manufacturing, industrial and production engineering are also covered. The applications of latest tools and techniques in the context of mechanical engineering problems are discussed in this book. The contents of this book will be useful for solving makes it a strong counterpoint to the idea of top-down "re-engineering." Looking at employment security, the authors note that while most US managers believe that it restrains managerial flexibility, managers at the firms they observed see it as essential to the flexibility associated with teamwork and kaizen. The study of human resource management practices suggests competitive advantages in diverse, older, unionized, and urban work students, researchers as well as industry professionals. forces, and emphasizes the importance of wide-ranging training programs in a work system premised on a long-term perspective. The "wildcard" in the work places observed is labor-management relations, the area in which Journal of the Institution of Engineers (India). Institution of Engineers (India). Electronics & Telecommunication Engineering Division 1976 Japanese managers have been least likely to import their ideas. The authors report on several situations in which existing labor-management structures remained untouched, with mixed results: greater labor-management **Power Plant Engineering** A. K. Raja 2006 This Text-Cum-Reference Book Has Been Written To Meet The Manifold Requirement And Achievement Of The Students And Researchers. The Objective Of This Book Is To Discuss, consultation, for example, but also increased ambiguity of roles. The thread running through all of these areas of work is "virtual knowledge," an ephemeral form of knowledge derived from a particular combination of people Analyses And Design The Various Power Plant Systems Serving The Society At Present And Will Serve In Coming Decades India In Particular And The World In General. The Issues Related To Energy With Stress And focused on a given issue. The authors point out that this powerful form of knowledge is only effectively harnessed in environments that are free of fear, that have established procedures for collective problem-solving, and that Environment Up To Some Extent And Finally Find Ways To Implement The Outcome. Salient Features # Utilization Of Non-Conventional Energy Resources # Includes Green House Effect # Gives Latest Information S In Power have some stability in group composition. They claim that too often companies allow virtual knowledge to dissipate, squandering opportunities to create more competitive workplaces. For those organizations that have Plant Engineering# Include Large Number Of Problems Of Both Indian And Foreign Universities# Rich Contents, Lucid Manner succeeded in anticipating and channeling it, however, virtual knowledge leads to a knowledge-driven workplace and continuous improvement. Singapore Blue Chips, The: The Rewards & Risks Of Investing In Singapore's Largest Corporates Vijayaraghavan Nandini 2017-01-24 A pioneering and comprehensive work, The Singapore Blue Chips puts the spotlight on 22 Manufacturing Process H.N. Gupta 2009 Effective from 2008-09 session, U.P.T.U. has introduced the subject of manufacturing processes for first year engineering students of all streams. This textbook covers the entire course of Singapore's largest corporates. This is the first book that provides a quick snapshot of Singapore's large cap (large market capitalisation) corporates as investment propositions, and is a timely tribute to the nation's 50 years material in a distilled form. of independence and development. Written for finance professionals and students as well as readers with a general interest in business, investing and finance, each chapter of this book is dedicated to one company and delves Bulletin of the Institution of Engineers (India). Institution of Engineers (India) 1984 into its attractiveness as an investment proposition, the associated investments risk and the company's prospects as of end-2016. Textbook on Professional Ethics and Human Values R.S. Naagarazan 2006

A Textbook of Strength of Materials R. K. Bansal 2010

Maintenance Engineering Handbook Keith Mobley 2008-04-20 Stay Up to Date on the Latest Issues in Maintenance Engineering The most comprehensive resource of its kind, Maintenance Engineering Handbook has long been a staple for engineers, managers, and technicians seeking current advice on everything from tools and techniques to planning and scheduling. This brand-new edition brings you up to date on the most pertinent aspects of identifying and repairing faulty equipment; such dated subjects as sanitation and housekeeping have been removed. Maintenance Engineering Handbook has been advising plant and facility professionals for more than 50 years. Whether you're new to the profession or a practiced veteran, this updated edition is an absolute necessity. New and updated sections include: Belt Drives, provided by the Gates Corporation Repair and Maintenance Cost Estimation Ventilation Fans and Exhaust Systems 10 New Chapters on Maintenance of Mechanical Equipment Inside: • Organization and Management of the Maintenance Function • Maintenance Practices • Engineering and Analysis Tools • Maintenance of Facilities and Equipment • Maintenance of Mechanical Equipment • Maintenance of Electrical Equipment • Instrumentation and Reliability Tools • Lubrication • Maintenance Welding • **Chemical Corrosion Control and Cleaning**

Practical Electrical Equipment and Installations in Hazardous Areas Geoffrey Bottrill 2005-02-15 This book provides the reader with an understanding of the hazards involved in using electrical equipment in Potentially Explosive Atmospheres. It is based on the newly adopted international IEC79 Series of Standards that are now harmonizing and replacing older national Standards. Explosion-proof installations can be expensive to design, install and operate. The strategies and techniques described in this book can significantly reduce costs whilst maintaining plant safety. The book explains the associated terminology and its correct use - from Area Classification through to the selection of explosion-protected electrical apparatus, describing how protection is achieved and maintained in line with these international requirements. The IEC standards require that engineering staff and their management are trained effectively and safely in Hazardous Areas, and this book is designed to help fulfill that need. A basic understanding of instrumentation and electrical theory would be of benefit to the reader, but no previous knowledge of hazardous area installation is required. * An engineer's guide to the hazards and best practice for using electrical equipment in Potentially Explosive Atmospheres. * Fully in line with the newly adopted international standards, the IEC79 series. * Clear explanations of terminology and background information make this the most accessible book on this subject. Commonwealth Universities Yearbook 1995

Monthly Catalogue, United States Public Documents 1993-07

Practical Hydraulic Systems: Operation and Troubleshooting for Engineers and Technicians Ravi Doddannavar 2005-02-07 Whatever your hydraulic applications, Practical Hydraulic Systems: Operation & Troubleshooting For Engineers & Technicians will help you to increase your knowledge of the fundamentals, improve your maintenance programs and become an excellent troubleshooter of problems in this area. Cutaways of all major components are included in the book to visually demonstrate the components' construction and operation. Developing an understanding of how it works leads to an understanding of how and why it fails. Multimedia views of the equipment are shown, to give as realistic a view of hydraulic systems as possible. The book is highly practical, comprehensive and interactive. It discusses Hydraulic Systems construction, design applications, operations, maintenance, and management issues and provides you with the most up-to-date information and Best Practice in dealing with the subject. * A focus on maintenance and troubleshooting makes this book essential reading for practising engineers. * Written to cover the requirements of mechanical / industrial and civil engineering. * Cutaway diagrams demonstrate the construction and operation of key equipment Engineering Economy Leland T. Blank 2001-08-01 This student-friendly text on the current economic issues particular to engineering covers the topics needed to analyze engineering alternatives. Students use both handworked and spreadsheet solutions of examples, problems and case studies. In this edition the options have been increased with an expanded spreadsheet analysis component, twice the number of case studies, and virtually all new end-of-chapter problems. The chapters on factor derivation and usage, cost estimation, replacement studies, and after-tax evaluation have been heavily revised. New material is included on public sector projects and cost estimation. A reordering of chapters puts the fundamental topics up front in the text. Many chapters include a special set of problems that prepare the students for the Fundamentals of Engineering (FE) exam. This text provides students and practicing professionals with a solid preparation in the financial understanding of engineering problems and projects, as well as the techniques needed for evaluating and making sound economic decisions. Distinguishing characteristics include learning objectives for each chapter, an easy-to-read writing style, many solved examples, integrated spreadsheets, and case studies throughout the text. Graphical crossreferencing between topics and quick-solve spreadsheet solutions are indicated in the margin throughout the text. While the chapters are progressive, over three-quarters can stand alone, allowing instructors flexibility for meeting course needs. A complete online learning center (OLC) offers supplemental practice problems, spreadsheet exercises, and review questions for the the Fundamentals of Engineering (FE) exam. Sustainable Design and Manufacturing 2020 Steffen G. Scholz 2020-09-10 This book consists of peer-reviewed papers, presented at the International Conference on Sustainable Design and Manufacturing (SDM 2020). Leading-edge research into sustainable design and manufacturing aims to enable the manufacturing industry to grow by adopting more advanced technologies and at the same time improve its sustainability by reducing its environmental impact. Relevant themes and topics include sustainable design, innovation and services; sustainable manufacturing processes and technology; sustainable manufacturing systems and enterprises; and decision support for sustainability. Application areas are wide and varied. The book provides an excellent overview of the latest developments in the sustainable design and manufacturing areas. Advances in Through-life Engineering Services Louis Redding 2017-04-22 This edited book offers further advances, new perspectives, and developments from world leaders in the field of through-life engineering services (TES). It builds up on the earlier book by the same authors entitled: "Through-life Engineering Services: Motivation, Theory and Practice." This compendium introduces and discusses further, the developments in workshopbased and 'in situ' maintenance and support of high-value engineering products, as well as the application of drone technology for autonomous and self-healing product support. The links between 'integrated planning' and planned obsolescence, risk and cost modelling are also examined. The role of data, information, and knowledge management relative to component and system degradation and failure is also presented. This is supported by consideration of the effects upon the maintenance and support decision by the presence of 'No Fault Found' error signals within system data. Further to this the role of diagnostics and prognostics is also discussed. In addition,